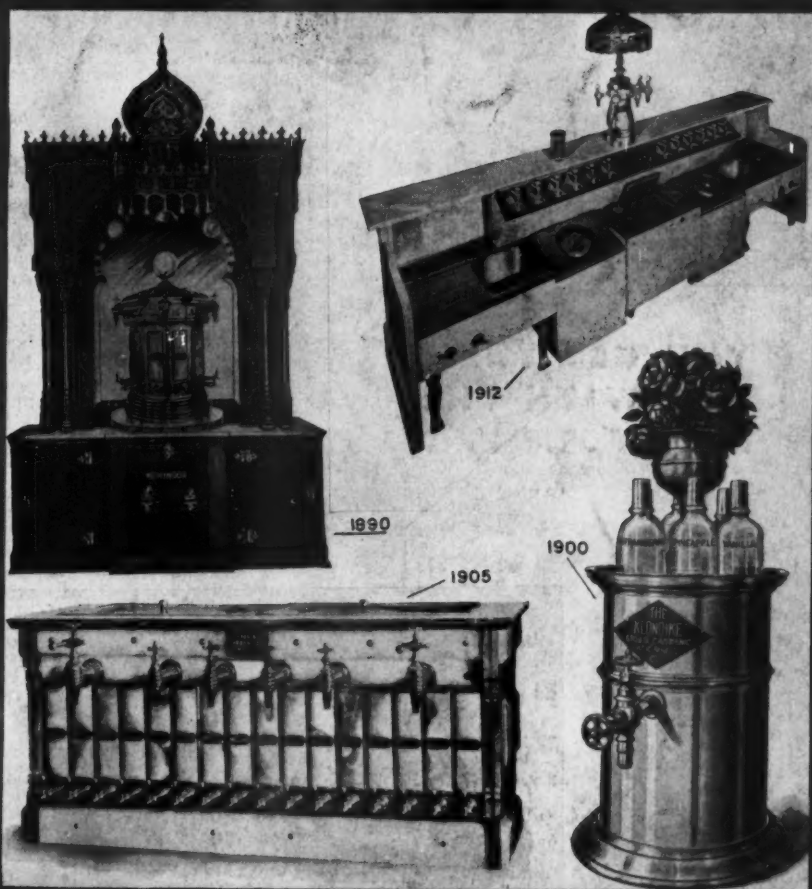


Refrigeration Service Engineer

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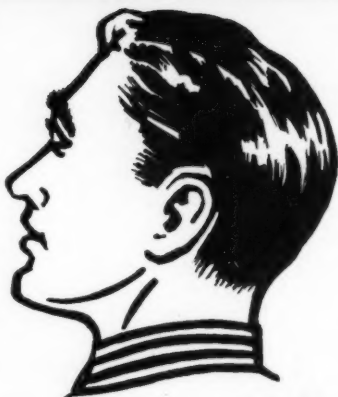
Starting—The History and Development
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March, 1940

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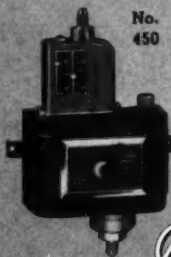
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The Refrigeration Service Engineer

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CHICAGO, MARCH, 1940

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History and Development of the Soda Fountain

By A. F. McMAHON*

THINK of a present day soda fountain and we envision a device for handling and dispensing cold drinking water, sparkling carbonated water plus ice cream and syrups, preserves and flavors.

But this merger of ice cream flavor and soda water did not always exist, it came about over a period of years—not such a great many years, but enough so that some of the details are dimmed or missing, and therefore, I refuse to be held to a strict accounting for the authenticity of this history. Some is fact—some is legend; but before there were soda fountains of any manner—ice cream was known and eaten by wealthier people. It was long alleged that Dolly Madison, the wife of the American President, from 1809 to 1817, invented ice cream, but recent research reveals that she merely was the first person of note to serve it in the United States. This was at a White House reception.

It seems that the first ice cream actually was made by a London, England, confectioner, named Gunton, and from him others

learned to make it. It was introduced into the United States about 1780, although it is said that the first advertisement for ice cream appeared in the New York Gazette in 1777, and it is a matter of record that the first American patent on an ice cream freezer was issued in 1848.

Most authorities have conceded that Jacob Fussel is the father of the wholesale ice cream industry. Mr. Fussel was a Baltimore, Maryland, milk dealer, who, in 1851 decided to manufacture ice cream in order to use up his surplus cream.

From various other sources we have gleaned the information that: Emperor Nero had the rough idea when he combined snow from the mountain tops with fresh fruit juices; Marco Polo discovered frozen milk ices in Asia and introduced them in Italy; Catherine De Medici borrowed the recipe for France; King Charles I of England brought over a French chef and ice cream became the favorite royal dish.

On the other hand, in July, 1886, the Lancaster, Wisconsin, "Herald" published an item entitled "The History of Ice Cream," which described the freezing of

* Service Manager, Bastian Blessing Co., Chicago. Paper delivered before the 6th Annual R.S.E.S. Convention.

cow elk's milk by Indian squaws in the early American days, and states, "when sugar was brought among them, the Indians took to sweetening their frozen milk. The white settlers took to the new dish and the avidity with which it was consumed led to the regular establishment of it among the trade."

To give you an idea of the proportions now assumed by this delicacy, or food, as you will, the American people consumed last year approximately 400,000,000 gallons, which figured at eighty cents (.80) a gallon—means a national business of \$320,000,000.

A great portion of this huge amount of ice cream, along with 9,000,000 gallons of ices and sherbets was dispensed by some 500,000 fountaineers (soda jerkers to you) in 8,500,000,000 portions over approximately 95,000 soda fountains.

And, if you are still interested—the manufacture required $\frac{1}{16}$ of all the milk produced along with 192,000,000 lbs. of sugar, 136,000,000 lbs. of butter fat and 4,000,000 lbs. of gelatin, and required the services of 25,000 workmen. Such is the history of ice cream.

Soda Water or Carbonated Water

Soda water or carbonated water has almost as obscure a beginning. Joseph Priestly, who is immortalized as the discoverer of oxygen, found that carbon dioxide gas, dissolved in water had a "pleasant acidulous taste," and told this to a commercially-minded friend who bottled it and sold it as "The Nephite Julep."

In 1772 the medical profession officially recognized the beneficial properties of carbonated water, but little was done about it until 1805, a Philadelphia druggist named Townsend Speakman who had filled several prescriptions for "Aqua Acidi Carbonici" in order to make the prescription more palatable to children. He added flavor, thereby changing what was intended for a medicinal drink, into a delicious beverage. Mr. Speakman's beverage became very popular and in time was imitated by others.

The manufacture of carbon dioxide gas at that time was limited to small quantities produced by the druggist himself in glass vessels by dripping sulphuric acid on chalk—marble dust—or Bicarbonate of Soda; the thus liberated carbon dioxide was conducted by hose to a closed vessel partially filled with water, which, when shaken absorbed a certain amount of the gas. As the demand increased, closed metal containers called "generators" were produced,

in which gas could be generated at a pressure of about 150 lbs. which made it possible to produce more highly carbonated water. At the same time, the metal water tank containing, when $\frac{3}{4}$ full, about 15 gal-



Fig. 1—Early Carbonator.

lons of water, came into use and was referred to as a "Fountain."

This tank or fountain was filled with plain water and laid on its side on a wooden rocker, and it was connected by high pressure hose to the generator.

The function of the rocker was to splash the water around, presenting as great a surface as possible to the gas, making it possible for the water to absorb about $2\frac{1}{2}$ volumes of CO_2 .

The fountain was then ready for use and could be connected by tin pipes, to a faucet, conveniently located at the counter.

John Mathews, a Massachusetts brass goods manufacturer, seems to be the first producer of these faucets, which he attempted to make both useful and decorative, and the first efforts to beautify them seem to have taken the form of a metal vase with the spouts projecting from the sides; these vases were simply placed on top of the druggist's wooden prescription counter.

We are indebted to the Chicago Historical Society for a nice example of these fore-runners of the present day fountain. Mathews produced his equipment about 1882 (over 100 years ago) and a successor in 1863 devised a method of cooling the water by icing coils in the draft vase, although a patent was issued to A. D. Puffer in 1864, covering the icing of soda coolers.

This gave rise to a change in the contour of the fountain, and in order to provide space for the cracked ice and the coolers, the fountain took the shape of a rectangular or square box, usually of wood, and sometimes intricately hand-carved, but



Fig. 2—The first soda fountain as preserved by the Chicago Historical Society.

it remained as a separate unit standing on top of the counter, the box usually being about 24" x 18" and possibly 18" high.

Later, the syrup and flavor jars were incorporated in the same cabinet with individual spigots for drawing the syrup. The cabinets became real works of art, assuming the shape of miniature houses with turrets and gables and hanging bowls of colored water.

In about 1866, porcelain syrup containers came into use and the fountain became a wall fixture rather than standing on top of the counter. It was put in back of the counter against the wall. A drip gutter was placed beneath it and a drain

provided. Marble was first used as a base and later as a facing for the cabinet, and still later formed the cabinet sides.

The fountain remained pretty much in that shape with the addition only of a plain water faucet, until about 1899 when the first front service, or counter service soda fountain was devised.

It is interesting to note that during this transition, while the soda fountain was patented, about 1832 or 1833, that no one had enough imagination to drop a scoop of ice cream into a glass of soda water until 1874. There are various stories in connection with this event, the nicest one seems to be that at a Philadelphia Centennial Celebration, something in the nature of a Chautauqua, both soda water and ice cream were being served, and they ran out of ice for the soda, and rather than serve it warm, they put some cold ice cream into it to cool the soda water. From there on you can use your own imagination; but definitely the ice cream soda preceded the ice cream sundae by many years. As a matter of fact, the source of the ice cream sundae is a pretty much befogged issue in itself—there are many, many versions. One of them, for example, is that in Ithaca, N. Y., in 1876, the Red Cross Pharmacy was located directly across the street from the old Ithaca Hotel with its barroom. On Sundays, when the bar was closed, thirsty patrons dropped in at the drug store for refreshment. A new ice cream dish was created to satisfy their tastes and was called the "ice cream sunday."

There is one version, however, that is closer to home, and that is—the village of Evanston, just north of Chicago, was in the late '90's, nicknamed "Heavenston" because it was Methodist-minded and so pious that



Fig. 4—Right—Early models of Ice Cream cabinets which were cooled with ice.

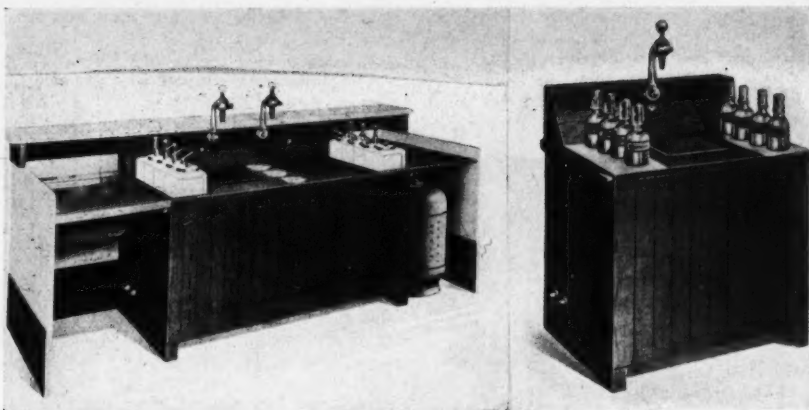


Fig. 5—(Right)—The first cabinet incorporating cooled syrup jars and (left) the introduction about 1890 of the porcelain syrup jar with pump.

the town fathers, resenting the dissipating influences of the soda fountain, passed an ordinance forbidding the sale of ice cream sodas on Sunday.

Some ingenious fountain operators, however, got around the law by serving ice cream with syrup, but without soda. This sodaless soda was the Sunday soda, and became so popular that orders for "Sundays" crossed the counter every day of the week.

When objection was raised to christening the dish after the Sabbath, the spelling was changed to Sundae.

The porcelain syrup jars with the pump came into being in the 1890's, and the first front service soda fountains were simply a wooden counter with a marble top slab, usually a decorative marble urn affair with a leaded glass lamp shade above, with the draft arms projecting from the marble

pedestal, and beneath the counter a wooden cabinet containing two cans of ice cream and a sink for washing glasses, and $\frac{1}{2}$ dozen syrup jars and pumps. The soda water and plain water was cooled by cylinder coolers that were located in the ice cream cabinet beneath the counter.

(Continued in the April Issue)



Fig. 6—The "ice-less" fountain cooled with ice. Note the soda fixture which took the form of a table lamp with leaded glass shade.

Selling Service Work

By LARRY LARSEN *

IT is an axiom of business which applies to everything from refrigeration service work to making battleships that the fruits of labor are limited in return. However, labor combined with merchandising or selling of products is not so limited. This is due to the fact that you and I use an entirely different yard stick in measuring services than we do in evaluating goods. On the one hand our unit is definite, usually expressed as so much per hour, day, week or month. Even though we admit that there is a certain overhead that must be added to the direct labor, it is our effort to hold this at a minimum. To put it in concrete terms, Mrs. Jones may pay, even a little grudgingly \$1.50 or even \$2.00 an hour for service on her refrigerator. But that is tops.

In evaluating merchandise, our unit of measure is entirely different. Here the time element is lost. Mrs. Jones bases her conclusions on the utility of that merchandise, on the service which she expects it to perform. Let's take another extreme example. You install a control in Mrs. Jones' refrigerator. The total bill is the equivalent of perhaps four hours of labor. The actual time spent on the installation is only one-half hour, yet Mrs. Jones pays eight times as large a bill with several times the net profit without question.

What is the difference, in the first instance you sold labor and in the second you sold merchandise and labor.

All of this is elementary. The greater the proportion of merchandise to labor, the greater the potential profit.

The Tinkerer

Immediately when we think of merchandising in connection with service work, we run into the oft-repeated objection that the customer simply will not pay for new parts. Granted, this is a matter of education and perfection of the service set-up.

Let us go back just a few years, to the days of the famous cartoon "Gasoline Alley."

We can well remember those bright, sunny Sunday mornings when all of the garage doors were open to the alley. The old family "bus" sat out in back of each one. The whole morning was spent in washing, rubbing, polishing, and greasing the old car. In those days we even pulled the pan, set up bearings, fitted new piston rings, ground valves and a host of other dirty chores.

Then a well-known car started to question in their advertising whether we bought an automobile to drive or to work on. A host of alley garages sprung up over night peopled by "cold chisel and hammer" mechanics. They would spend hours brazing up some broken part or fashioning some makeshift mechanical atrocity out of hay-wire and hand iron. When we got our bill we wondered whether Jesse James had gone modern and now operated in a garage without a gun. Go into a modern service station, do they tinker the old parts? Suppose that a water pump springs a leak? You buy a new assembly—and what is more important—you are glad to do it, because you have reasonable assurance that the replacement will last as long as the original part. It should—it is new.

Now that service station might have tinkered the old pump. When they presented the bill for six dollars covering three hours' labor there would have been an apology on their lips. On the other hand, they present a bill for perhaps eight or ten dollars representing only one hour labor and the balance parts on which they have doubled their money. That is why more than half of every automobile salesroom is devoted to the service department. There is money in it.

Refrigeration is passing through the same phases. A few years ago, anyone who had the price of a tool box containing a set of wrenches, a flaring tool and perhaps a pair of gauges could set himself up as a serviceman. All that he knew was how to tinker. I have actually seen seals lapped in that must have taken an hour or two of monotonous work. A new one could be bought for perhaps seventy-five cents. That man's time was worth only perhaps thirty-five cents an

* Assistant Sales Manager, Tecumseh Products Co.

hour, not even enough to pay his overhead. And the pathetic part of it is that, with his crude lapping method, the seal could not be made to hold perfectly even at the start and probably it failed again in just a few months. The loss of gas was much greater than the cost of his resurfaced seal. The automobile people learned this years ago. Refrigeration is just starting.

It is equally axiomatic that no transaction is ever permanently profitable unless all parties in the transaction get value received. This includes the customer and the greatest value to the customer is to replace worn-out equipment with new equipment on which they may expect life equal to the original life of the parts replaced. Your customer may call you back a second time to do a job over. But if it becomes a habit, they will find another serviceman.

What Should Be Replaced

Many times, in fact almost every time, this idea is expressed to a serviceman, we get a stock reply, about to this effect. "My customers won't stand for the price that I have to charge," or "I tried that on Mrs. Blank and she bought a new refrigerator." This brings us squarely up against the question of how far to go in servicing an old refrigerator. Again, go back to the old automobile experience. We have all stages of repair. Some cars are literally not worth putting any more money into. On the other hand many can be made to give thousands of miles of additional service by having new batteries, generators, and what not installed. A few of them even have a new motor installed, perhaps due to a broken block or an accident. Refrigeration, likewise, has all sorts of conditions of units in use. Obviously, we cannot continue to repair units indefinitely. If we did so, the new market would soon be exhausted and our manufacturing plants shut down.

How shall we determine how far to go? There are probably two extremes among our customers and all classes in between. Some of our customers have plenty of what it takes to buy new equipment. When the old box is a few years old and perhaps a seal lets go, they buy one of the new boxes with that brand new wire basket with the fancy name that is—according to the advertisement—the last word in the preservation of food or convenience. This individual is in the new unit market and is not a service prospect. They are an essential and vital part of the refrigeration market.

At the other extreme is that very thrifty family whose one thought is that the food does not spoil and that they have dependable refrigeration. This type of person does not care particularly whether it is equipped with the latest jewelry in the line of wire work, self discharging ice trays, etc. Nor whether the door panel is embossed with the 1930 or the 1940 design. Such people are good prospects for complete overhauling jobs.

There are all classes of individuals between these two types.

Then, too, the condition and age of the unit and box must be taken into consideration. There are many good cork insulated boxes in use that are ten or more years old. Many of them are as good or better than more modern competitive boxes. The only objection to them is that they have square corners.

Some of these boxes are equipped with obsolete units. For some of them it is impossible to get service parts. On such units the evaporator and box are usually in fairly good condition. At least with a modern expansion valve, control and compressor or highside, they can be made to supply dependable refrigeration for a number of years.

Not so many years ago several of the major manufacturers put out compressors that were not too good when new. Two or three of them folded up and the only possible replacements are so-called "gyp" parts. The greatest utility for these compressors is boat anchors on next summer's fishing parties. The kindest thing that you can do for your customers is to give them a new compressor with a new warranty.

A Hypothetical Case

To bring this all down to definite figures, let's examine a typical service call from the standpoints of the customer and the service shop.

The telephone rings at the AX Refrigeration Company and the following conversation ensues:

"Hello. This is Mrs. A. B. Jones, 1487 Center Street. Our Frigidaire stopped working and it smells so bad that it drove us all out of the house."

"We will send some one right over, Mrs. Jones."

The service man jumps into his car and goes over to the Jones' residence, consuming one-half hour's time and driving five miles. When he arrives he finds that the

name Frigidaire was used purely in its generic sense. Actually it is a King Ice of the vintage of perhaps 1928.

What shall Mrs. Jones do to get refrigeration; she has three alternatives:

1. Trade in the old box on a new one. This can be done. She can get perhaps \$10.00 to \$25.00 from a dealer as trading allowance depending on how hungry the dealer is for business at the moment. The new box cost is from \$180.00 to \$160.00 or the net cost of exchange is \$120.00 to \$185.00.

2. The old box can be repaired. In this case one analysis might be about as follows:

	COST	RESALE
Replacement Seal	\$ 1.50	\$ 3.00
2 Flapper Valves.....	.12	.24
Connecting Rod	1.25	2.50
Piston	1.50	3.00
2 Piston Rings.....	.10	.20
Piston Pin .....	.14	.28
4 gaskets .....	.32	.64
2 Pounds Refrigerant .....	.65	1.30
1 pint oil .....	.15	.30
	\$ 5.73	\$11.46

Time:

2 return trips to the Jones' house—

2 hours.

1 return trip to jobber for parts—

1 hour.

1½ hours at Jones' Residence.

2 hours' shop time.

TOTAL 6½ hours at \$1.50.....\$ 9.75

25 miles car at 5c..... 1.25

5.63

5.73 11.46

Total\$11.36 \$21.21

3. The service man might have had a replacement compressor in his car. When he talked with Mrs. Jones he could explain that the repair of the compressor including parts and labor would be about thirty dollars. Then he could analyze the cost of a new guaranteed unit about as follows:

	COST	RESALE
New Compressor	\$13.50	\$27.00
2 Pounds Refrigerant.....	.65	1.30
Material	\$14.15	\$28.30
Labor including 1 return trip from shop 1 hour.		
Installation of compressor.		
1 hour—total 2 hours.....	\$ 1.50	
10 miles car at 5c.....	.50	
Total	\$16.15	\$28.30
Gross Profit		\$12.15

The Customer's Choice

Now if we analyze the three possible choices of Mrs. Jones we find the following:

From her standpoint she has made her choice:

1. A New box at an outlay of between \$120.00 to \$185.00 net. On this she has a

one-year guarantee and perhaps an additional four-year warranty on parts only.

2. The old compressor repaired at a cost of \$21.11. It is still the old job. A trifle quieter in operation. The seal may go out again any time after perhaps one year or something else may wear out in a few months.

3. A new compressor for \$28.30 with the same warranty for one year that she has on the new box and a compressor that should not give trouble again sooner than the original compressor.



TECUMSEH TWIN CYLINDER COMPRESSOR

Which of these three will be selected if presented in that way? For an additional \$7.20 a new job can be installed instead of the old one tinkered. For about \$100.00 less than the cost of a new outfit, the old one can be put in new operating condition. I think that in most cases Mrs. Jones will select the new box.

The Service Man's Advantage

Bear in mind that there are only about eight working hours in a day. During that time our per hour productivity must be sufficient to supply all of our needs and those of our family. With this in mind let's look over the above from the standpoint of the service man. Obviously he makes nothing on the new box sale.

On the other two we can tabulate as follows:

	Cost to Cust.	Cost to Ser. Shop	Gross Profit
Repair	\$21.11	\$11.36	\$ 9.75
Replacement	28.30	16.15	12.15

	Hours Direct Lbr.	Prod. of Lbr. per hr.
Repair	6½	\$1.50
Replacement	2	6.07

With the straight repair job one man's labor can produce a total revenue of \$1.50 per hour gross. However, this same job combined with a little merchandising can produce as much as \$6.00 per hour on the same type of job.

Where will the service man make his money?

How Shall We Go About Convincing the Customer

Now for the old argument which we mentioned above. Most of us in this world are more interested in service rendered per dollar expended than we are in a cheap price. If this were not the case, there would be no quality products.

The best approach to the problem of selling the replacement instead of the repair idea is on the basis of cost per year, not cost per job.

Suppose we go at it this way, "We can repair this compressor, putting in a new seal, lapping the shaft, new valves, new piston, piston rings, piston pin, connecting rod, etc. That will give you a good serviceable job. However, we cannot guarantee that one of the replaced parts will not fail again in a year or so, or that something else may not go wrong at any time. Such a job would cost about \$21.00. However, if you are willing to put in just a little more, say \$28.00 into this job, we can give you a complete new compressor. This will be a brand new job and a much better unit than the original. You know that there have been a number of big advances in making compressors since you bought your box and the one which I would like to give you is a leader in the field of advanced engineering design. It should give you at least as long service as the original compressor and besides it is much quieter in operation and more efficient than the old one was when it was new."

The Commercial Installation

So far we talked mainly about domestic installations. Even more important from the customer angle is the dependability of service on commercial units. Perhaps we can illustrate this best by examining the contents of a domestic and a commercial refrigerator. Suppose that a domestic box was any type of failure. At most, a quart or two of milk and a little cream sour, a couple of pounds of meat spoil. Most of the food in the refrigerator will be usable if refrigerated again within a day. The total loss at most will not be more than a few dollars.

With the commercial job, on the other hand, this is not true. A single display counter may have food stored in it to a value of a hundred or two hundred dollars

and a walk-in box may have perishables running into the hundreds or even more. When Mr. John Q. Butcher locks up his store at nine o'clock on Saturday evening, he must be reasonably sure that the cases and boxes will be at refrigerating temperature on Monday morning. In July, for example, he might lose his entire stock with a greater value than a complete new refrigerating system including the condensing unit, coil, expansion valve, control and all of the miscellaneous gadgets. He would not think of operating his store without fire insurance. No more will he tolerate the equally destructive loss of refrigeration if it is pointed out to him that he can buy refrigeration insurance very cheaply.

Further, the commercial user is much less gadget minded than the domestic user. As long as the old box is usable, the customer wants only to replace worn-out refrigeration equipment. The elements of utility and cost are the deciding factors.

Then, too, the attitude toward refrigeration is different. In commercial refrigeration, the refrigerating unit is a piece of equipment used to increase the revenue of the business. Since a part of the revenue is derived from its use, the equipment must be kept up to the point where it will best fulfill its function.

For these reasons, commercial replacements are much easier to sell than domestic.

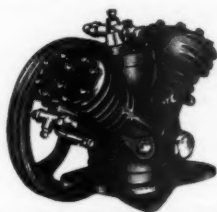
An Example

Let us take a service call which might be typical from Mr. John Q. Butcher. He has a standard make double duty ten-foot display case. A failure of refrigeration happened over the week-end, let us say a broken suction line. The case is about ten to fifteen years old. It was equipped with one of the earliest type cross fin coils, top and bottom, that is still usable. The old automatic expansion valve is of doubtful utility. The control is about shot. The high side was at one time a good $\frac{1}{4}$ hp. Blank unit. This company is still in business.

Now let us go back into recent history. This customer told me, for this is an actual case, that he had three service calls in the last six months. First it was a compressor overhaul, new belt, cleaning condenser and a number of other things. The cost \$28.50—reasonable enough. In addition there was a call or two on resetting the control that he did not have to pay for—the service company treated him fine. Next, a connection

let go, probably somewhere on the expansion valve or evaporator. This was the occasion of another service call amounting to about twelve dollars, as I recall it, covering loss of refrigerant, cleaning up the system, calcium dryer and some other items. The third call was for motor trouble. It was a DC job. The brushes were shot, the commutator about gone from being turned down. This bill was again modest—only \$10.50. At this point, I was asked by one of my good dealer friends to look this job over. By this time the butcher began to think that the service company was taking him for a ride. Here he had spent over fifty dollars in a period of about six months and had had three failures in that time.

Bear in mind, I am not criticizing the serviceman, except that he was decidedly labor minded instead of merchandise minded. Nor do I blame the manufacturer of the equipment. They are a leader in the industry and for a period of ten to fifteen years, the unit had given good service. Further it was a sulphur job and it had had moist air in it twice that I knew of.



TECUMSEH 4 CYLINDER V TYPE
COMPRESSOR

Extreme? Perhaps and yet I have known of literally dozens of cases just as extreme. I could tell you about a tavern with a thirty-foot box equipped with brine tank cooling and an old unit, good at the time of sale and still made. That cost the owner over \$60.00 in two months—but why go on. Every real serviceman knows this is common.

The Answer

Our answer to this one was similar to Mrs. Jones' case. John Q. Butcher had three alternatives:

1. To purchase a new case. He could buy a new one of standard make all the way from \$850.00 to \$1,100.00 with trade allowances from \$80.00 to \$800.00 so that in each instance unless he bought an "alley carpenter made" case, the cost would be around \$800.00 complete and installed.

2. He could tinker the old unit. Without the complete breakdown, which I do not have right now the cost was about as follows. Bear in mind that the job was sulphur and wet:

MATERIALS

	COST	RESALE
Compressor Repair Parts.....	\$ 9.10	\$18.20
Expansion Valve	6.50	13.00
Control	4.50	9.00
Gas	3.00	6.00
Dehydrator	2.50	5.00
	\$25.60	\$51.20

Labor to remove complete unit, flush coils, re-operate and dehydrate —14 hours	10.50	21.00
	\$36.10	\$72.20

Gross Profit **\$36.10**

GROSS PROFIT

3. He could install a complete new high side in which case the cost would be as follows:

	COST	RESALE
Proper Capacity Unit.....	\$60.00	\$120.00
Expansion Valve	6.50	13.00
Control	4.50	9.00
Dehydrator	2.50	5.00
	\$73.50	\$147.00

Labor Installing unit, flushing coil and lines and adjusting—4 hours..	3.00	
	\$76.50	147.00

Total **\$ 70.50**

The Service Profit

Now if we analyze this transaction we find that had a new case been bought, the serviceman would not have received any compensation.

Had he tinkered the old job his profit would have been \$36.10 for 14 hours labor or a total \$2.57 per hour gross.

By selling a new unit his gross profit was \$70.50 for four hours labor or \$17.62 per hour gross.

Which job would you rather have, Mr. Serviceman?

Of course we should also remark in passing that if Mr. Customer insisted on a repair job, he should at least have sold a compressor at a cost to him of \$17.50 and a resale of \$35.00 in which case he would have decreased the labor by about one-half and more than doubled his per hour income.

Again—the Customer Angle

For an additional \$96.00 the customer can secure complete new refrigerating equip-

ment instead of the old one tinkered. Bear in mind that he knows that his motor is about gone and that he has already spent about fifty dollars, or half of the difference, on service in the past six months.

Also, by installing a new unit, he is saving an immediate outlay of approximately \$650.00 for equipment. Probably the life of the two would be about equal.

Conclusion

Finally, let us explode once and for all time a totally erroneous feeling that has been expressed to me in many ways when discussing this matter with service men. It is usually associated with phrases like . . . "running up a bill . . ." or ". . . gyping the public . . ." or the like. The thought behind this reasoning is that the cheapest

job is necessarily the best for all concerned. This is surely a fallacy and we have tried to point it out above. In many cases it may be, but in many others the additional costs will result in overall saving and customer satisfaction. It is not the purpose of this article to attempt to make a lot of high pressure salesmen out of service men. Permanent service business is not built that way. Don't be like the fellow that serviced my job at home once when I was out of town. He charged \$2.50 for putting a little oil in, that the unit did not need.

Analyze your job honestly. If a replacement is cheapest in the long run, do not hesitate to sell merchandise because the immediate cost is greater. In this way you are performing a real service to your customer, increasing your earnings and are a benefit to the entire industry.

Locating Display Case Coils

THE proper location of coils in any refrigerated fixture is of course important. Due to the difficulty however in securing proper circulation and temperatures in display cases of various designs the location of coils in these fixtures is of extreme importance. The purpose of this article is to offer suggestions which will act as a guide when installing the coils.

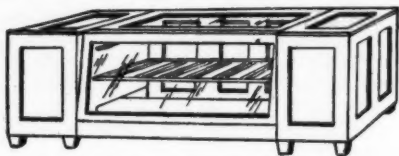


Fig. 1—All display freezer and bunker counter.

Display cases and counters serve two purposes—that of displaying and at the same time refrigerating foods. Some are satisfactory for low temperatures while others are only satisfactory for higher temperatures.

All Display, Freezer and Bunker Counter

The type of counter shown in Fig. 1 has been used with ice for a number of years.

The bunkers are large which of course is necessary to accommodate a sufficient supply of ice. Such counters if in good condition are, however, entirely satisfactory for electric refrigeration.

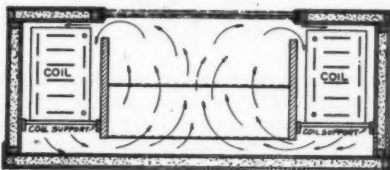


Fig. 2—Proper position of dry expansion coils in bunker.

A longitudinal-section of a bunker counter is illustrated in Fig. 2. The ice containers have been removed and cooling coils are shown in their place. The coils shown in this figure are of the finned dry-expansion type. When such coils are installed in this type of counter they should be installed so that the top is within about two inches of the top of the counter. Their construction is such that very little efficiency is lost when installed in this way. The advantage is that it forestalls the accumulation of ice on the bottom of

the coils as the bottom of the bunker is always colder than the upper part. However, if flooded coils are installed in this manner they will not operate satisfactorily because of the air not circulating through the flues on both sides of the coil because of the position of the float valve chamber. The top of this chamber should not be higher than the top of the baffle to obtain most satisfactory results.

In Fig. 2, $\frac{3}{4}$ -inch galvanized pipe has been used as coil supports but it is much better to have the coils suspended on hangers from the top or side of the case. Such hangers are readily available and in many instances either furnished with the coils or as a part of the case. Such arrangement provides coil support with minimum circulation interference.

All Service, Display and Freezer Cases

The display and freezer case in Fig. 3 is constructed for use with cooling coils only. It is satisfactory for low temperatures and at the same time affords a large glass frontage.

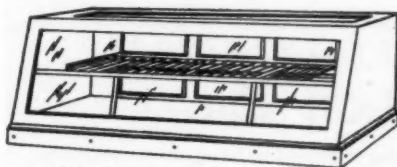


Fig. 3—All service, display and freezer case.

This type of case requires coils that are narrower and higher than those recommended for the bunker counter. The vertical baffles next to the coil compartments have been omitted in the figure in order to give a clearer view of the interior of the case. The baffles in this type of case should be similar to those shown in Fig. 2, although they are, of course, closer to the ends because as previously stated narrower coils are used.

There are cases, however, which have a horizontal baffle with an opening at the middle of the case and with this arrangement vertical baffles are not required.

Some display and freezer cases that are 14 ft. long or longer are constructed so that three coils may be used. This is a very good idea in the longer cases in that it enables obtaining a more even temperature in all parts of the case.

If dry-expansion coils are used in this type of case, they should be installed close

to the top as recommended for the freezer and bunker counter. The coils should be set on wood blocks or suspended by hangers.

Combination Storage and Display Cases

As the name suggests, the case in Fig. 4 has two compartments—an upper compartment for display and a compartment underneath for storage purposes which is also refrigerated.

The coils are so located that part of the surface is exposed in each compartment. It may not be necessary, however, to install them as close to the top of the case as recommended for the All Display and All Service cases. In the combination case, the position of the coils should be such that the proper temperatures are obtained and also, so that frost does not accumulate at the bottom.



Fig. 4—Combination storage and display case.

The storage compartment being in the bottom, a much colder temperature is maintained than in the display compartment at the top, which of course, is a desirable condition.

Top Display Cases

The top display case should be used where exceedingly low temperatures are not required. An end view of a top display case is shown in Fig. 6. The case illustrated has the coil compartment in the rear, and long, narrow coils are required. In order to aid circulation through the coils, they should be laid on short wood blocks about 2 inches square to raise them off of the bottom of the case. The blocks should be laid parallel with the fins on the coils.

The corresponding temperatures maintained in the top display case are given in Fig. 6. A customer must not expect to obtain low temperatures in the upper portions of the food compartment. Even though the top of the case is much warmer than the bottom, there is a distinct advantage in that the opening of the doors is less of a factor

from the standpoint of heat leakage.

It is very important that there is proper circulation over the top of the baffle into the coil compartment. If articles are tiered high enough to partly close this opening, unsatisfactory results will be experienced.

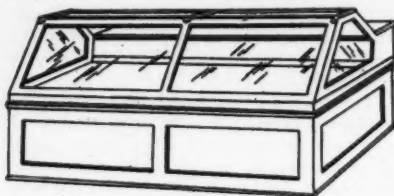


Fig. 5—Top display case

Top display cases are also constructed which have provisions in the top of the case for the cooling coils. With this type of construction there is a more even temperature throughout the food compartment and less possibility of interfering with circulation. The coils required, however, are the same as those used where the coil compartment is in the rear.

There is usually a compartment under the food storage compartment in a top display case, but this is not refrigerated and is used for storage of foods which do not require refrigeration.

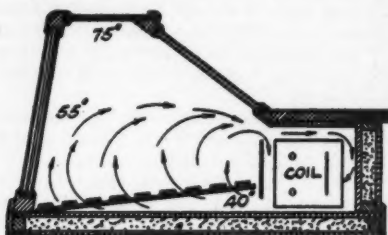


Fig. 6—End view of Top display case

Top display cases are very often used with market coolers. A considerable quantity of meat may be moved at one time from the cooler into the case where the display is very effective and when delivered to the customer in small quantity, the service factor is much less than if it were taken from the large cooler.

The Question Box

Readers are invited to send their problems pertaining to the servicing of household refrigerators and small commercial refrigerating equipment as well as oil burners to "The Question Box."

COPELAND TROUBLES

QUESTION 359: Upon a recent service call to repair a Copeland model, originally charged with Isobutane, I found the unit charged with SO₂. As the unit had an undercharge of refrigerant I discharged the unit and recharged the unit with its original refrigerant, Isobutane, operating the compressor at 58 pounds head pressure, expansion valve 4-inch vacuum in a 68° F. room. With this adjustment the evaporator functions perfectly, keeping a 45° F. temperature in the box. The only drawback is a frosting and wet suction line from the evaporator and the compressor.

If I lower the head pressure, the compressor and motor short cycles; if I adjust the expansion valve to a higher vacuum, the evaporator will defrost; if I lower the expansion

to atmospheric pressure I get a greater frost at the suction line. My problem is to stop the suction line from getting frosted and wet, dripping water while running. Can you give me any light on the problem? Any suggestions will be greatly appreciated.

Would slowing the revolution of the compressor with a smaller pulley on the motor remedy the situation? Or, will this unit operate satisfactorily with SO₂ refrigerant with the present indirect, dry, evaporator, with an automatic expansion valve, cold controlled?

ANSWER: Your present trouble with the Copeland Model 1 unit is due to too high a back pressure on the unit.

I would suggest that you adjust your expansion valve so you obtain a back pressure of somewhere between 6 and 10 inches vacuum, or, in other words, I would continue

adjusting the expansion valve for a lower pressure until the frost on the return line disappears. When you have reached the point where the frost line is within two or three inches of the evaporator at the time the machine shuts off you will have secured the proper expansion valve adjustment.

I believe the machine would work better on sulphur dioxide as you found it; however, now that you have changed it over to Isobutane, before you could put sulphur in it again it would be necessary to dismantle the entire unit, thoroughly wash it out with carbon tetrachloride, change the oil in the compressor and thoroughly dry the system.

There is no reason, however, why Isobutane should not work satisfactorily after you secure the proper expansion valve adjustment.

DRYING AN SO₂ SYSTEM

QUESTION 360: I have two 1½ hp. sulphur jobs which drew in a lot of moisture in a low side, and now are clogging up strainers nearly once a week. What would be the best to use in the dryer to get the acid out of the system?

ANSWER: The best and cheapest method of removing moisture and contamination from the sulphur dioxide systems you describe is to discharge all the refrigerant, change the oil in the compressor and wash it with carbon tetrachloride, blow out the refrigerant lines and the coils with high pressure gas or CO₂, pump a vacuum on the system and heat all parts as much as possible with a torch; then recharge with new refrigerant.

It is true that sulphur dioxide can be dried with one of the drying agents found on the market, and through drying you will remove the acid contained in the system at present. The drying process, however, is rather lengthy and quite difficult to produce satisfactory results and in the meantime the condition in the compressor due to corrosion from the moisture is becoming rapidly worse.

If you intend making an attempt to dry the system through the ordinary methods, I would suggest that you use one of the advertised drying agents, using about a 4-mesh size, and installing the dryer in the suction line. In doing this you will to some degree protect the compressor from moisture, which will return with the return gas and thus possibly avoid a stuck-up compressor. Furthermore, according to data we have on hand on the subject, it is claimed that a better job of

drying on sulphur dioxide can be obtained by treating the gas in its vapor stage.

I would install the dryer as described above, then pump down the system to zero pounds pressure and apply heat with a blow torch to all sections of the coil so that any moisture contained in the coil or any ice formation will be removed and picked up by the dehydrator.

It would possibly be advantageous to pull a low vacuum on the coil while this heating is going on so that the vaporized moisture will be pulled through the dryer. After you have completed this operation it will probably be well to remove the dryer and renew or reactivate the drying agent, then replace.

It is quite probable you will have to change this dryer a number of times before a thorough job of drying is done. If you are successful, though, I would suggest that after you feel the moisture is all removed that a permanent dryer of the same material be placed in the liquid line.

This entire subject was covered pretty thoroughly in the December 1938 issue of *THE REFRIGERATION SERVICE ENGINEER* in an article entitled, "Dryers and Drying Agents" appearing on Page 13. I would suggest that you refer to it for further information.

ADDING ADDITIONAL FIXTURES TO AMMONIA MACHINE

QUESTION 361: I have a customer that has a 2 hp. A.C. 220 V. motor, driving a one-cylinder York ammonia machine. It is a slaughter house where beef and veal are dressed and kept at 36° to 38° F. There is a Mercoid switch with its thermo bulb suspended in the air. It allows the machine to run practically steady. There are five coils 5 feet by 5 feet square, and pipes are 1½-inch in diameter. Now, he wants to have an extra small room added to the compressor. This room will be separate from the big cooler, but having the same temperature. This room will be 8 feet by 8 feet square, well insulated, and which is to be used for night service. What size coil will it take? About the same as the others? Then, he has a 10-foot display case, single windows in another building about ten feet away from the other big cooler. He wants this also hooked on the York system. I will have to tee in the nearest coil lines for that and insulate the pipes with asbestos, or whatever you advise. Shall I run them underground? If

not, what size unit would have to be used and what refrigerant. The owner wants to use the ammonia hook-ups in order to save, but he may run into trouble. I do not know much about ammonia jobs.

Refrigerated Truck

He also has a Chevrolet truck with a Norge compressor using methyl chloride, driven by a belt from double pulley on the generator. The condenser, 10 inches by 10 and $\frac{3}{4}$ inch tube is located in front of the radiator. It has a receiver there also. The coil is $\frac{3}{8}$ -inch tube, 4 feet long with four coils and a thermo expansion valve. The insulation is two layers of wood. The coil didn't frost up as it did before. I removed the check valve at compressor; screen was broken and solder drops with long filings of tubing clogged it. I repaired screen and replaced disc on seat. It didn't look scratched up. At fifty miles an hour back pressure reaches 25 pounds and won't go any lower. Is the expansion valve gone too? I tried to adjust it but of no avail. The compressor pulls 25 inches and stays there. When the shut-off valve was opened it jumped gauge to 10 pounds. Then again it didn't. What would be right gas charge? Would you advise new system or new valves? Is compressor heavy enough?

ANSWER: You have not given me any idea of the size of the walk-in cooler on which the 2-hp. York machine is employed at present and therefore I have no means of knowing to what extent this machine is loaded.

However, you state that the machine is running practically steady now and that leads me to believe that it must be loaded to its full capacity. Therefore, I am wondering how you can add an additional walk-in cooler and a 10-foot display case to it under these conditions.

These two additional fixtures will require approximately $\frac{3}{4}$ -hp. load, which is almost half the capacity of your York machine. If your machine is already running full time it will be impossible to add anything more to it. If, however, the machine can be loaded to this extent and you find it possible to connect the two additional fixtures to it I think it will be necessary to install thermal expansion valves on all three fixtures so you may be able to obtain proper control. It would not be necessary under these conditions to insulate the lines running to the display case since there would be no refrigeration in these lines after the controls were properly adjusted.

With regard to the Chevrolet truck, again you have not given me any idea of the space to be refrigerated. I am, therefore, not able to tell whether the compressor used is large enough.

Taking it for granted that the compressor is large enough, since it did frost up prior to your present trouble, I am of the opinion that the trouble is now due to either a defective expansion valve or to insufficient refrigerant in the system.

It is quite possible that some of the copper filings and solder have gotten under the seat of the valve causing it to leak.

HOW TO DISTINGUISH BETWEEN METHYL AND FREON. HOW TO CALCULATE CAPACITOR SIZE

QUESTION 362: 1. How to distinguish between Methyl Chloride, Methyl Formate and Freon in a refrigerating system on which the nameplate and data are missing.

2. The formula for calculating the capacity Amperes; of a capacitor at 60 cycles is $2650 \times$ Volts what will be the formula for 50 cycles?

3. Referring to the "Capacitor Tester" in the May issue of The Refrigeration Service Engineer please advise, (a) what wattage should be the resistance, and (b) how many mfd. capacitor when Tester is used on a 220 volt line?

ANSWER: Methyl chloride and Freon are perhaps the two most difficult gases to distinguish between. Since their operating pressures are sufficiently close together and the odor is practically the same, it is easy to make a mistake in assuming which gas the machine contains. Methyl Formate has such a low boiling temperature that immediately the gauges are placed on the machine, there can be no mistake about it. Of course, as you know, the boiling temperature of this gas is 90 degrees.

There are two methods left open for distinguishing between methyl chloride and Freon. The first of these is where it is possible to draw off a small quantity of the liquid refrigerant in a test tube or any open container and insert in it a pocket thermometer. If the thermometer shows a temperature of approximately minus ten degrees, the refrigerant is methyl chloride. If the temperature is minus twenty-two degrees, or thereabouts, the refrigerant will be Freon. Where the machine does not contain any liquid, or where it is not possible to draw

liquid from it, we can make a test by utilizing the fact that Methyl Chloride burns where Freon does not. Methyl chloride, of course, will not burn very readily, but if a small enough opening is created so that only a small amount of vapor refrigerant is released, it is possible to make it burn. Freon, however, will not ignite under any circumstances.

As far as I know, there is no formula for the calculation of capacitor sizes on fifty-cycle current, or if there is such a formula, I have not been able to find one. It is the usual practice, however, based on experience, to determine the capacitor size through the formula you have stated for 60-cycle, then add about ten percent more the M.f.d. for 50 cycles.

With reference to the capacitor tester in the May issue of *The Refrigeration Service Engineer*, this device, of course, was not intended to be used on 220 volts. However, I believe that one could be built for 220 volts by replacing the 110-volt lamp with a 220-volt lamp, replacing the resistance with a 220-volt element of approximately the same wattage. The capacitor size could be calculated using the same formula you gave me in your letter, and would be approximately 80 M.f.d.

COOLING WINE

QUESTION 363: I would like to have some information on a job that is something new to me. I have a party who wants to cool wine by refrigeration. They want to run the wine through a three-inch pipe, in which is the refrigerant, in a copper (tinned plate) line. The temperature of the wine at maximum will be about 95° F., and must be cooled to around 70° F., as wine, when too hot, stops fermenting—hence the refrigeration. This wine is to be pumped through the three-inch pipe at the rate of 1,000 gallons per hour and a temperature of 70° F. The alcohol content is not over 14 per cent after cooling, or in other words, this is the state law—before cooling the percentage may be from 6 to 10 per cent.

What I would like to know is, how much three-inch pipe to use, figuring the three-inch pipe in 20-foot lengths, and also size of refrigerant lines to run in this set-up in order to keep the 25° F. temperature difference. Size of refrigerant unit, which must be air cooled as this is to be a portable unit. I do not like the idea of running refrigerant lines through the three-inch pipe, as it will nat-

urally be on the bottom of pipe unless it is held up by some means which would restrict the flow of wine. Is there some way that this could be done along the lines of a milk cooler? I suppose that the copper tubing could be heavy enough so that it would stay in place, but I am at a loss to see how it can be done.

Wine to be pumped at the rate of 1,000 gallons per hour, temperature difference 25° F., maximum 95° F., and minimum 70° F. Alcohol content not over 14 per cent at any time. Portable air cooled unit. This unit is to run from five to six, or ten hours steady when pumping. Safe to figure sixteen hours per day.

ANSWER: Wines should have a specific gravity of around 1.0 and a specific heat of about .9. The alcohol content will vary with the kind of wine, but in our particular problem we are not concerned with this factor since it affects only the freezing temperature.

A thousand gallons of wine will equal about 8,400 pounds and the heat to be removed when cooled to a temperature difference of 25 degrees will be $8,400 \times 25 \times .9$ equals 189,000 B.t.u.

You state that the winery will pump 1,000 gallons per hour through the cooler but I am sure that this means they wish to cool 1,000 gallons per hour through the whole range of 25 degrees. If they do, then your machine will have to have a capacity of 189,000 B.t.u. per hour or more, which will be about a 10-hp. water cooled machine.

If the cooling is to be done over a period of hours, then divide the 189,000 by the number of hours required to cool in order to obtain the machine capacity.

I have no authentic information on wine cooling, but it occurs to me that there are several methods with which the cooling can be done. Most important of these methods are through the use of—

First—A double pipe, single pass cooler such as the method suggested by you.

Second—A multi-pass shell and tube cooler of a construction such as used for condensers on large plants.

Third—Utilizing one of the larger water coolers on the market.

The first of these methods in my opinion would be too difficult to build and the cost would be considerably more than the other two methods mentioned. Also, since you desire to make this unit a portable type I believe that this type of cooler would be far too cumbersome.

The second method should be perfectly okeh if you can obtain one constructed of metals which would not be affected by wine.

The third method seems to me to be the best and I would suggest the use of the recirculating type of water unit such as manufactured by the Jensen Creamery Machinery Co., Inc., Oakland, Calif. Coolers of this type are usually constructed of stainless steel or some other easily cleaned material which is not easily affected by the acids which may be contained in the wines. They are compact

in construction and offer the highest efficiency in operation on this particular type of work.

With regard to your desire that this unit be of an air cooled type, it appears to me that the size of the unit will make this feature impossible. However, in order to help you make it a portable unit it is quite possible to add an evaporative condenser to the system which may be mounted along with the other refrigerating equipment, thus making the entire installation portable.

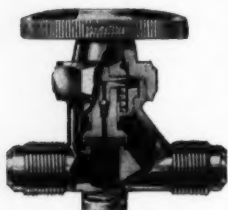
NEW MECHANICAL DEVICES Service Tools and Special Equipment

Under this heading there will be published illustrated descriptions of new or improved service tools and equipment for the Service Engineer. Information contained in this department is furnished by the manufacturer of the article described and is not to be construed as the opinion of the Editor.

HENRY DIAPHRAGM PACKLESS VALVE

A BALANCED action diaphragm packless valve, was introduced by the Henry Valve Co. at the All-Industry Refrigeration and Air Conditioning Exhibition.

While 24 features are claimed for the new product, 11 of them being called exclusive features, the principal one is the balancing action.



HENRY
DIAPHRAGM
VALVE.

When the valve is opened, the pressure below the diaphragms and above the valve stem is instantly released through a balancing channel in the valve stem. Opening action is positive—the valve cannot "stick shut," regardless of differential in pressure above or below the valve seat.

Longer diaphragm life is claimed by the company because of the light weight spring, the non-rotating bearing plate in the upper stem, and four laminated puncture-and-fracture proof diaphragm construction.

In order to eliminate tube bending and to save time in installation, inlet and outlet ports are in line on two and three-way valves. The Ovaline hand-wheel, which provides a natural gripping surface, is another feature especially designed for the service engineer or operator.

Other products introduced by the Henry Valve Co. included balanced-action diaphragm packless hand expansion valves and forged steel receiver valves. The hand expansion valves are for use in conjunction with solenoid valves or in by-passes around various types of automatic control valves.

PEERLESS PRESENTS NEW PRODUCTS

AT the annual show of the refrigeration industry, held in Chicago, Peerless of America, Inc., announced a new refrigeration plate, which will be manufactured at the main plant in Chicago only, for the time being.

The Peerless plate is admirably adapted to a wide range of uses, with especial emphasis on low temperature applications. The company's products will include truck plates for both high and low temperature service, and long distance transports. Plates may be procured in a great variety of sizes, for quick freezers and for locker rooms.

Other uses for these plates include storage boxes, wrapping tables, display cases, salad counters, window displays, and replacement equipment for old soda fountains and ice cream cabinets.

New Roto-Beam Fans

Peerless of America, Inc. takes another step forward by taking over the sales of the Roto-Beam Company, located at 8300 South Indiana Avenue. The Company will be known in the future as Peerless of America, Inc.—Roto-Beam Division.

The Roto-Beam Company is a well established firm, manufacturing electric air circulators, which is an entirely new principle in air circulation. The Roto-Beam circulation is a gentle pulsation of air, not merely in front of the propeller, but in every corner of the room. This pulsation gives natural "skin breathing" . . . which provides body comfort . . . even in hot, humid weather.

Peerless are planning to distribute Roto-Beam Circulators through their regular refrigeration and air conditioning channels. The reason Peerless decided to sell fans along with refrigeration and air conditioning products is the fact that it is very much allied to this industry, as the Roto-Beam Circulators will be used in connection with refrigeration in many cases, for use in refrigeration boxes where coils have been installed and there is poor baffling, making poor circulation; for locker storage applications along with the present refrigeration equipment.

§ § §

ALCO VALVE INTRODUCES NEW PRESSURE REGULATORS

ALCO Valve Company, St. Louis, Missouri, introduced recently a new line of pilot operated evaporator pressure regulators which created quite a bit of interest because of the outstanding design improvements and simplicity of construction offered.

These regulators have been designed to accurately maintain constant evaporator pressures regardless of sudden load changes or fluctuations in suction pressure. Their exacting and rapid performance insures successful operation on either single or multiple systems equipped with any standard liquid refrigerant control, such as float valves, thermo valves, etc.

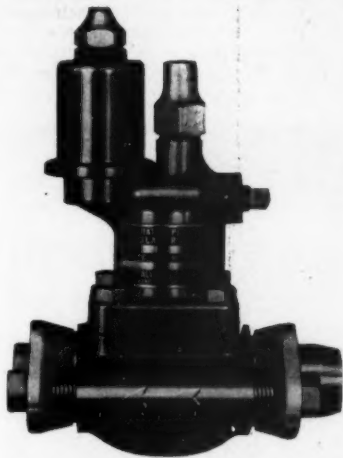
Particular attention has been given to performance at very light loads and, by the combination of adequate control stability and the use of a gradually opening port, chattering and fluttering has been eliminated.

All sliding parts have been eliminated from the friction free floating Alco pilot, which insures the maintenance of the selected evaporator pressure at all times.

A minimum operating differential of two pounds between evaporator and suction pressures is sufficient for the proper operation of the valve. The well established Alco principle of removable valve cages has also been employed in the design of the evaporator pressure regulators. The entire valve seat and poppet assembly, i.e., the valve cage, is

replaceable without removing the valve proper from the line.

These Evaporator Pressure Regulators will be offered in port sizes from $\frac{3}{4}$ " to 2" and a large variety of connection sizes.



ALCO VALVE PRESSURE REGULATOR

Alco Valve Company has also added to its line of completely waterproof magnetic valves, the Type S2 which is a packless, pilot operated piston type stop valve for use with Freon, methyl chloride, brine, water, gas, air and steam.

An extra powerful solenoid is provided which requires no fusetron protection. This coil will not overheat or burn out even with the valve blocked in the closed position.

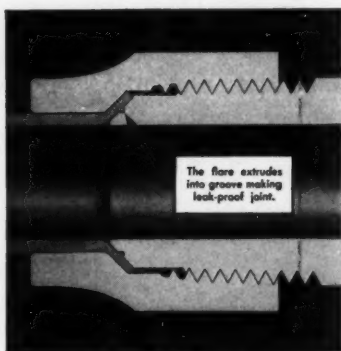
Alco demonstrated the merit of these waterproof coils by means of a special test, started July 14, 1938, in which two valves were in actual operation even though the valves and coils were completely immersed in water. This test was started in the Alco Experimental Laboratory in July, 1938, and the test with these same valves were transported to the First All-Industry Exhibition in January, 1939, and they made a return appearance at the Second All-Industry Exhibition in Chicago, last month.

§ § §

TRIPLE-SEAL FLARE FITTING ANNOUNCED BY IMPERIAL BRASS

A NEW flare fitting, called the Imperial Triple-Seal Flare Fitting, which, it is stated, will remain leak-proof even when its seat has been badly nicked or marred, has been announced by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago.

The new fitting is said to be identical to the standard SAE refrigeration-type brass flare fitting except that it is made with a groove in its seat as shown in the accompanying diagram. When the flare is drawn up against this groove the copper tubing is extruded into the groove making a self-seating joint. This joint, the manufacturer points out, will remain leak-proof even though the face of the fitting may have been badly damaged.



**Groove incorporated
in seat of fitting**

CROSS SECTION OF NEW FITTINGS

Actually, the use of this groove results in three distinct seals being formed by the fitting, Imperial's chief engineer, R. M. McIntosh, states. The face of the fitting on each side of the groove forms two of the seals, while a third—or safety seal—is formed by the groove itself. Thus even if the face of the fitting should be damaged, this safety seal protects against leakage.

All Imperial flare fittings for refrigeration and air conditioning purposes manufactured in the future will have this Triple-Seal feature, it is stated. These fittings will carry no extra charge. The new fittings are completely described in manufacturer's bulletin No. 100 REF.

NEW WIDE-VISION GOGGLE OFFERS ADDED ADVANTAGES

A FULL 150 degree effective range of vision is offered in the new No. 220 Wide-Vision Goggle illustrated, one of the

latest developments of the Chicago Eye Shield Company, Dept. C, 2362, Warren Boulevard, Chicago. This is said by the manufacturer to be tantamount to obtaining the widest practical amount of working vision through the medium of lens-embodiment eye-protective devices. Hardened safety lenses provide maximum protection against severe impacts. Both lenses are easy to renew, by sliding them through the outer side of each eye-cup, and inserting the new replacement.

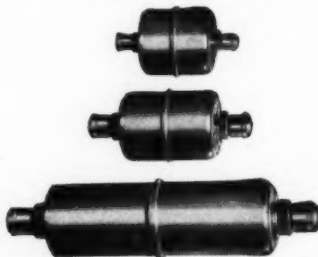


NEWLY DESIGNED GOGGLES

One of the important features found in the new Cesco 220 wide-vision goggle consists of the new one-piece moulded cushion pad, which is composed of a very pliable material highly resistant to perspiration. These cushion pads are said to conform to varying contours of practically every wearer, seating each eye-cup comfortably and snugly. Additional ventilation holes in the rust-proof metal portion of the eye-cups increases cool air circulation. The nose bridge is adjustable to varying facial widths, which accounts in part for the general utility value of the new unit.

SERIES 408 "TRAP-IT"

OUTSTANDING development for increased operating efficiency of expansion or solenoid valves is the new series 408 "Trap-It" introduced to the trade recently by the Automatic Products Company.



AUTOMATIC PRODUCTS "TRAP-IT"

Specially designed to trap all impurities such as water, scale, gummy deposits and

particles of solder, this new unit is said to have many times the filtering and absorbing area of an ordinary strainer. It contains nothing that can dissolve or be injurious to the refrigeration system, and, according to manufacturer's reports, prevents many of the causes for sticking or slow acting valves which can often be traced to sources other than the valve itself.

At the present time the unit is available in three sizes. The small size is furnished with a $\frac{1}{4}$ inch or $\frac{3}{8}$ inch S.A.E. male flare inlet and outlet connection and is suitable for installations of one ton. The medium size, also available with the $\frac{1}{4}$ inch or $\frac{3}{8}$ inch inlet and outlet connections, will handle two tons of refrigeration, while the large-size unit is adequate for systems up to four tons, and is available with $\frac{3}{8}$ inch or $\frac{1}{2}$ inch S.A.E. inlet and outlet connections.

These recommendations for size are based on the use of Freon. The "Trap-It" unit will handle twice the amount of refrigeration where methyl chloride or sulphur dioxide is used.

Carefully engineered, the filtering element is held in place by a centering cup and a strong, non-corrosive spring. The element itself is a specially wound bobbin of coarse processed cotton yarn of soft texture. The individual strands of the bobbin overlap so as to present a materially increased absorbing area to moisture and filtering surface for any foreign matter that might enter the system. The yarn is wound around an open metal core, and forms a honeycomb of diamond-shaped filtering tunnels as a result of the overlapping. It is of uniform density throughout.

MARLO MULTISTAGE-SLOTTED AIR CONDITIONING COIL

RECENTLY announced by Marlo Coil Company is a new multistage-slotted air conditioning coil. In the design of this coil, a plenum space or gap is provided between two of the rows of coil. By means of this gap, the following benefits are derived.

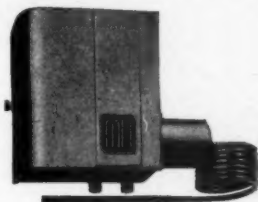
When passing over a finned coil, air being confined between fins, is compressed when passing over the tubes and again expands in the space between the tubes. In the construction described a further expansion takes place in the plenum space or gap caused by the increase in volume resulting from the absence of the fin displacement. This causes a definite drop in air velocity through the gap which again becomes increased on entering the next stage. The velocity and pressure change then takes place in the plenum space or gap bringing about a physical and thermal mixing of the air which is desirable to produce the utmost capacity out of the remaining section or sections of the coil.

Beyond the thermal and physical benefits described, mechanical benefits are derived in that there has been demonstrated in use of this construction that the coil surface becomes largely self-cleaning and does not clog up so readily with suspended matter such as lint, dust, fibres, etc., in the air, as happens in present contemporary design.

LIGHT DUTY POLARTRONS

THE new light duty Polartrons, may be used to control refrigeration compressor motors under one hp. or larger sizes if used to pilot a magnetic starter. They embody all of the features of the present heavy-duty type Polartron including "Frost Free Constant Cold Control" of refrigeration coils and independent adjustment of "on" and "off" suction pressures.

Models are available for "low side" or both "low and high side" pressure control. A small pilot relay easily inserted in the Polartron case may be attached in the field, if desired, to permit room thermostat control of refrigeration. This provides a very flexible arrangement, simplifying stocking problems and allowing the addition of thermostatic control at any later date.



THE POLARTRON IN A NEW DESIGN

The Polartrons are decidedly new in their streamlined appearance as well as their mechanical design.

They are extremely simple in operation—one moving lever transmits the pressure changes directly into switching action—no complex mechanism dependent upon each component part for operating efficiency.

Extreme accuracy is attained through the proper choice of lever ratios and spring rates so that slight variations in these two factors do not affect calibration.

The switching mechanism is a newly designed snap-action, non-magnetic switch—compact, sealed, grimeproof and dustproof—insuring long dependable life.

These controls are universal for all non-corrosive refrigerants—provide their own pressure connections—positively will not short cycle. A product of the Minneapolis-Honeywell Regulator Co., 2950 So. 4th Ave., Minneapolis, Minn.

Fedders

HEAVY DUTY EVAPORATORS

The big money is in the big installations, which is another way of saying that it is a good business to specialize on commercial work. The three Fedders shown above are typical of the complete range of types which makes every customer your complete maker and cabinet specialist. Fedders, which is another name for the complete range of types which makes every customer your complete maker and cabinet specialist. Fedders, which is another name for the complete range of types which makes every customer your complete maker and cabinet specialist.



PORTABLE V-BELT SERVICE KIT SAVES CALL-BACKS—MAKES EXTRA SALES

ACCORDING to the unanimous vote of refrigerator servicemen, who have seen it, Dayton's new Portable V-Belt Service Kit "is just what the doctor ordered" for on-the-job belt replacements.

Introduced as the result of a careful survey of servicemen's problems, this new V-Belt service kit for the back of the car saves costly extra trips and creates plus sales. With this portable, easy-to-handle Service Kit which fits in the back of any car (even in a motorcycle compartment) there is no need to pass up a belt sale when inspection discloses a badly worn belt. Instead it's a

THE NEW DAYTON V-BELT KIT

1—EASY TO HANDLE—compact, tough and durable, telescoping case of Swedish Fibre, richly finished in brown—with heavily reinforced corners and steel edges—strong leather handle and all-round web strap.

2—FITS IN THE BACK OF ANY CAR—even a motorcycle compartment—The Dayton V-Belt Service Kit gives "on the job" V-Belt replacement service for all leading makes of automatic refrigerators.

3—OPEN ON THE JOB the Dayton V-Belt Service Kit includes an assortment of 43 fractional horse power V-Belts—also a Ready Reference V-Belt Replacement Catalog and the handy V-Belt Matchometer for quickly measuring worn out belts and instantly identifying the correct replacement Dayton V-Belt. 80% of V-Belt replacements for household refrigerators are included in the assortment of 43 Dayton V-Belts for all leading makes such as Frigidaire, General Electric, Kelvinator, Norge, Servel, Westinghouse and others. Service Kit complete with assortment of 43 V-Belts is offered at special price of \$23.48, or a saving of \$7.85, during the introductory period only. This price is cost of V-Belts alone and during introductory period no charge is made for Carrying Case, regular value \$6.35, or V-Belt Matchometer, regular value \$1.50.

matter of a minute or two to replace the belt—save a call-back—and keep the customer satisfied.

The kit itself is an easy-to-handle, tough and durable, reinforced Swedish Fibre case. Inside it, and visible at a glance, is an assortment of 43 belts which covers 80 per cent of the V-Belt replacements needed on all leading makes of household refrigerators. Included, also, is a ready reference V-Belt replacement catalog and a handy V-Belt Matchometer for quickly measuring worn out belts and identifying the correct replacement belt needed.

Easy to carry from the car to the home,

Gunning for a bird called PROFITS?



...TURN TO

Now combined for a healthy profit every month in the year: America's No. 1 line of Commercial Refrigeration—plus G-E Automatic Heating—plus G-E Air Conditioning. Get details on the franchise in *your* territory. Send coupon below.

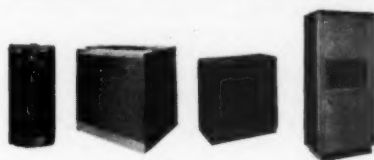


COMMERCIAL REFRIGERATION



A complete line of quality commercial refrigeration including water coolers, beverage coolers, food storage cabinets, display cabinets, etc., meets almost every prospect's needs.

HEATING AND AIR CONDITIONING



Heating equipment, oil or gas fired, for warm air or radiator heat. Plus a conversion oil burner.

Air Conditioning for rooms, whole houses, shops, theatres, hotels.

Complete lines built to sell, now may be under one franchise. And you don't need special training.

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Div. 199-171, Bloomfield, New Jersey
Please give me full details on the G-E Franchise for this territory.

Name _____ Address _____

City _____ State _____



Saving Thousands of Kilowatts Everyday! **KEROTEST G-W CONTROL** **MASTER ROBOT OF THE REFRIGERATION WORLD**

Hailed as one of the greatest developments in refrigeration mechanics more than 10 years ago, and since installed in thousands of refrigerator systems, the Kerotest GW Control is today universally used throughout the industry to shorten the running time of the compressor and assure positive temperature control.

Installed in the lower pressure coils, these sensitive back pressure valves eliminate interference with the thermostatically controlled expansion valve... give complete control of the compressor switch... enable each coil to act independently, thus reducing the running time of the compressor to a minimum.

Applicable to old and new installations, Kerotest GW Controls are now available in a complete range of sizes from $\frac{1}{4}$ " to $2\frac{1}{2}$ ".



Kerotest GW Control-Type 120 is famous for the economical regulation of all refrigerator systems from $\frac{1}{4}$ " to $\frac{3}{4}$ "



Extra large capacity GW Controls available in complete range of sizes from $\frac{3}{4}$ " to $2\frac{1}{2}$ " with O. D. Solder Connections.

KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

and easily replenished by the jobber, this telescoping service kit can be expanded to hold additional belts if desired. And while the original assortment fits ideally the needs of general servicemen, the kit can be re-packed by the jobber to include a different assortment for servicemen who specialize on one leading make of refrigerator.

During the introductory period The Dayton Rubber Manufacturing Company announces a special price on this V-Belt service kit. This introductory special saves servicemen approximately 25 per cent. During this period, the serviceman pays only the regular price of the actual belts, and no charge is made for the carrying case and the V-Belt Matchometer.

WEATHERHEAD SILICA GEL DRYER

A NEW Silica Gel dryer and filter that absorbs all moisture from refrigerants was shown at the Chicago refrigeration show. The dryer body is all metal construction, copper hydrogen brazed into one integral assembly with no felts or organic filters to clog or impede flow of refrigerant liquids. The Silica Gel with which it is filled

is a powerful moisture absorbent and neutralizer. It is chemically stable and does not dust or break down. Of the five different



SILICA GEL DRYER.

sizes three are filled with a removable plug which makes them rechargeable. The other two dryers are for permanent installation on small units and are not rechargeable.

SUPERIOR QUICK-COUPERS

QUICK-COUPERS are exactly what the name implies. Handy little swivel couplers for "quickly coupling" charging lines, gauge lines, etc., to male SAE flare connections on refrigerant cylinder valves, gauge sets, compressor service valves and numerous other equipment without the use of wrenches, and without the nuisance resulting from worn out and broken copper flares.

Quick-Couplers have a soft composition gasket in the swivel connection, which makes a pressure tight seal on the face of the flare fitting when the heavy knurled swivel nut is

ANY OF THESE WELL-KNOWN DISTRIBUTORS OF

KERO TEST

REFRIGERATION PRODUCTS

Stands ready to quickly serve you!

JOBBER WITH LOCAL STOCKS

Allentown, Pa. General Refrigeration Supply Co.	Miami, Fla. Railey-Miam, Inc.
Atlanta, Ga. J. M. Tull Metal & Supply Co., Inc.	Milwaukee, Wis. Gustave A. Larson Co.
Atlanta, Ga. Bowen Refrigeration Supplies, Inc.	Milwaukee, Wis. Refrigeration Specialty Co.
Baltimore, Md. Clendenin Bros., Inc.	Minneapolis, Minn.
Baltimore, Md. Melchior, Armstrong, Dessau Co.	Refrigeration & Industrial Supply Co., Inc.
Baltimore, Md. Parks & Hull Co.	Montreal, Quebec, Canada.
Binghamton, N. Y. Service Supply Co.	..... Railway & Engineering Specialties, Ltd.
Boston, Mass. A. E. Borden Co.	Mt. Vernon, N. Y.
Bridgeport, Conn. Parsons Bros.	..... County Seat Plumbing Supply Co.
Brooklyn, N. Y.	Newark, N. J. T. W. Binder Co.
..... Coleman Electrical Supply Co., Inc.	Newark, N. J. Melchior, Armstrong, Dessau Co.
Brooklyn, N. Y. The Capson Company	New Haven, Conn. Resco, Inc.
Brooklyn, N. Y. Melchior, Armstrong, Dessau Co.	New Orleans, La. Enoch Sales Co.
Brooklyn, N. Y. Perry Metal Products Co.	New York, N. Y. Aetna Supply Co.
Buffalo, N. Y. Melchior, Armstrong, Dessau Co.	New York, N. Y.
Buffalo, N. Y. Root, Neal & Co.	..... Melchior, Armstrong, Dessau Co.
Cambridge, Mass.	New York, N. Y.
..... Melchior, Armstrong, Dessau Co.	..... Paramount Electrical Supply Co.
Charleston, W. Va.	Norfolk, Va. Melchior, Armstrong, Dessau Co.
..... Air Conditioning & Refrigeration Supplies, Inc.	Noland, Cal. Noland Co., Inc.
Charlotte, N. C. Henry V. Dick Co.	Oakland, Calif. California Refrigerator Co.
Chattanooga, Tenn. Noland Co., Inc.	Oklahoma City, Okla. Midake Supply Co.
Chicago, Ill. The Harry Alter Co.	Omaha, Nebraska
Chicago, Ill. H. W. Blythe Company	..... Busch Refrigeration Supply Co.
Chicago, Ill.	Oshkosh, Wis. Gustave A. Larson Co.
..... Automatic Heating & Cooling Supply Co.	Philadelphia, Pa.
Chicago, Ill. Alro Supply Co. Melchior, Armstrong, Dessau Co.
Chicago, Ill. H. Channon Co.	Philadelphia, Pa. Victor Sales & Supply Co.
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Cincinnati, Ohio. The Mark Bros. Co.	Pittsburgh, Pa. Wm. M. Orr
Cincinnati, Ohio. Williams & Company	Portland, Ore.
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Columbus, Ohio. Refrigeration Electric Supply Co.	Providence, R. I.
Dallas, Texas. The Electromotive Co. Rhode Island Supply & Eng. Co.
Davenport, Iowa. Republic Electric Co.	Rochester, N. Y.
Dayton, Ohio. The W. H. Kieffer Co.	Rochester, N. Y. Ontario Metal Supply, Inc.
Denver, Colo. McComb's Refrigeration Supply Co.	Rockford, Ill. Gustave A. Larson Co.
Detroit, Mich. J. M. Ober, Inc.	St. Joseph, Mo. Bristol Supply Co.
Fort Wayne, Ind. H. J. Schroeder Co.	St. Louis, Mo. B. E. Thompson Company
Greensboro, N. C. Hasco, Inc.	Salt Lake City, Utah. Peerless Utah Co.
Harrisburg, Pa. Melchior, Armstrong, Dessau Co.	San Francisco, Calif. California Refrigerator Co.
Hartford, Conn. Marsden & Wasserman, Inc.	Seattle, Wash. Refrigerative Supply Co., Inc.
Hempstead, Long Island, N. Y. Sid Harvey, Inc.	Sioux City, Iowa. National Refrigeration Service
Houston, Tex. Standard Brass & Mfg. Co.	South Bend, Ind. F. H. Langenkamp Co.
Houston, Tex. Walter Refrigeration Supply Co.	Springfield, Ill. United States Electric Co.
Indianapolis, Ind. F. H. Langenkamp Co.	Springfield, Mass. C. F. Payson Co.
Jacksonville, Fla. Jamila Company	Toledo, Ohio.
Jamaica, Long Island, N. Y. Sid Harvey, Inc.	..... The Heat & Power Engineering Co.
Kansas City, Mo.	Toronto, Ontario, Canada.
..... Forslund Pump & Machinery Co.	..... Railway & Engineering Specialties, Ltd.
Knoxville, Tenn. Leinart Engineering Co.	Tulsa, Okla. Machine Tool & Supply Co.
London, Ont., Canada.	Valley Stream, N. Y. Sid Harvey, Inc.
..... Refrigeration Supplies Co., Ltd.	Vancouver, B. C., Canada. Fieck Bros., Ltd.
Long Beach, Calif. L. B. Marsh (Allied Ref'n.)	Washington, D. C. Refrigeration Supply Co.
Los Angeles, Calif. Frank Glett Co.	Washington, D. C.
Los Angeles, Calif. Refrigeration Service, Inc.	..... Melchior, Armstrong, Dessau Co.
Los Angeles, Calif.	Waterloo, Iowa. Winterbottom Supply Co.
..... Refrigeration Supplies Distributor	White Plains, N. Y.
Louisville, Ky. Louisville Mill Supply Co., Inc.	..... County Seat Plumbing Supply Co., Inc.
Macon, Ga. Lowe Electric Co.	Wilkes-Barre, Pa. Radio Service Co.
Madison, Wis. Gustave A. Larson Co.	Winnipeg, Manitoba, Canada.
Memphis, Tenn. United Refrigerator Supply Co. Railway & Engineering Specialties, Ltd.
	Worcester, Mass. Standard Supply Co.

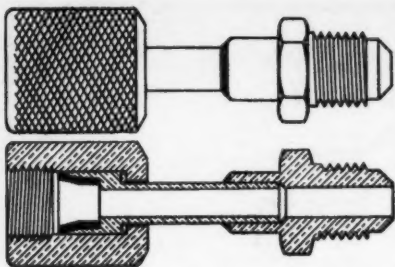
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Dayton, Ohio	Los Angeles, Calif.	Philadelphia, Pa.	San Francisco, Calif.

GENERAL EXPORT REPRESENTATIVES

Melchior, Armstrong, Dessau Co., Inc.
300 Fourth Ave., New York City, N. Y., U. S. A.

FOR PROMPT DELIVERIES JUST PHONE YOUR NEAREST JOBBER!



TWO VIEWS OF THE QUICK COUPLERS

pulled up with the fingers, on the male SAE flare fitting. No wrenches are required. The ingenious arrangement of the soft composition gasket does the work which formerly required the application of wrenches. Replacement of the gasket is a simple and inexpensive procedure. Hence, Quick-Couplers are inexpensive, as well as very useful tools. Attach a Quick-Coupler to each of your charging and gauge lines. They are available for use on $\frac{1}{4}$ -inch, $\frac{3}{8}$ -inch, $\frac{1}{2}$ -inch and $\frac{5}{8}$ -inch SAE flare fittings.

HARRY ALTER CO. PRESENTS THE HUMIDOME

PRESENTED to the trade for the first time in January, the Harry Alter Co., 1728 South Michigan Ave., Chicago, are now featuring the new Humidome.



THE HUMIDOME

The simplicity of the Humidome assures trouble-free operation. The "Miracle Drum" is made of everlasting bronze screen and because of its patented construction affords thirty square feet of evaporating sur-

face, in spite of compact size. All metal construction throughout—no wicks, towels, excelsior pads to smell and become unsanitary. No sprays ejecting free moisture into the air to leave lime deposits on furniture. No expensive heating elements.

The overall dimensions of the unit are $16\frac{1}{4}$ inches high, 15 inches wide and $13\frac{1}{2}$ inches deep. It operates on 87 watts and delivers 300 c.f.m. of humidified air. The reservoir capacity is five gallons and the unit will evaporate up to two quarts of water per hour.

NEW APPLIANCES BY AMERICAN INJECTOR CO.

THE new Aminco Purifilter operates on a new principle to purify and filter the refrigerant. It removes not only scale, chips and other relatively large particles, but also moisture, wax, gum, carbon, acids and microscopically small particles.

The Purifilter contains a cartridge of paper-thin discs of a synthetic material. These discs are held together under spring pressure (of definite load) to form a column with a hole through its center, but closed off at one end. The liquid refrigerant entering at the inlet end flows around the outside of the cartridge.



The Aminco Purifilter (above) which embodies a new principle in filtering.



Below — A replacement type high side float for most Hermetic units.

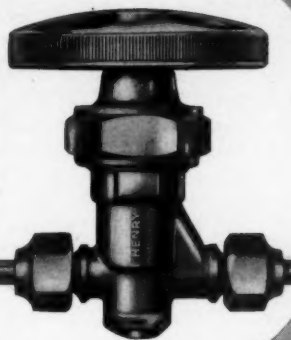
Because the surface of the discs are touching each other the particles of foreign matter cannot enter between them and so must stay on the edges and there they will pile up. However, because they cannot wedge together the liquid can still pass through them.

The Purifilter is now available in two sizes—No. 1822 for capacities up to $\frac{1}{2}$ hp. and No. 1823 for capacities from $\frac{1}{2}$ to 1 hp. Both sizes show no pressure drop within their respective ranges.

Replacement High Side Float

The No. 369 hermetic type float is designed as a replacement on G.E. monitor top units

ONLY *Henry*
BALANCED-ACTION
DIAPHRAGM PACKLESS
VALVES OFFER YOU



*Ports in line**

NEATER LINES AND EASIER INSTALLATION

Liquid and suction lines can now be installed with military trimness; tube bending can be eliminated; it is easier and cheaper to install valves in a system—these are the advantages of Ports-in-Line design.

This feature has been approved by leading manufacturers, who recognize its importance and have recommended this new Henry product to their sales and service departments. To contractors Henry offers an opportunity for increased profits through lower installation costs. Servicemen take pride in the neat work that Ports-in-Line makes possible. With such widespread acceptance, the Henry Balanced-Action Diaphragm Packless Valve is an ideal jobber line. It's easier to use, easier to install, easier to sell.

Henry Diaphragm Packless Valves have twenty-four important features, eleven of which have never been available up to now, yet these valves cost no more than ordinary packless valves.

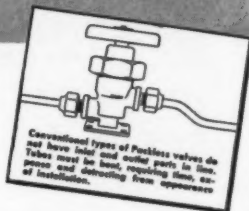
Dryers, Strainers, and Valves for Refrigeration and Air Conditioning. Also Ammonia Valves and Forged Steel Fittings.

Recommended and Sold by leading jobbers
★ On two and three way valves



HENRY VALVE COMPANY

1919 NO. SPAULDING AVENUE • CHICAGO, ILLINOIS



**OVALINE
HANDWHEEL**

The only handwheel with
a natural gripping surface

ADVANTAGES OF BALANCED-ACTION

Valve can't "stick shut."
Non-directional. Light
spring, giving longer dia-
phragm life and easier
operation.

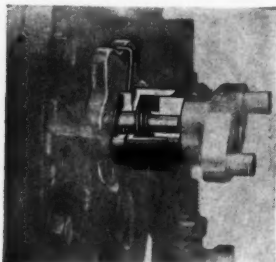
and other hermetically sealed refrigerating units.

There is little or no possibility of this float getting out of order. It is offered as a complete replacement and should not be disassembled. The Aminco seat is guaranteed against corrosion. This feature increases many times the length of float life and eliminates float trouble due to acid in the system.

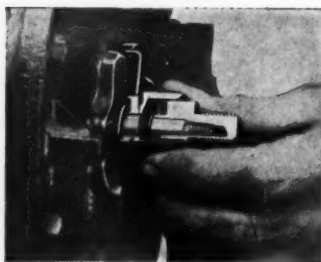
\$\$\$

ROTARY SEAL EXPANDS LINE TO 130 REPLACEMENT UNITS

BY adding 16 new replacement units to their lines the Rotary Seal Co., 809 Madison Street, Chicago, Ill., now have available 130 replacement units covering all the popular makes of compressors. Among the most popular of the new units are the Coldspot No. 6400 and 6401.



COLDSPOT UNIT NOS. 6400 AND 6401



EASY TO INSTALL ON THE JOB

Other additions to the line are listed below.

NEW UNITS ADDED TO LINE

Compressor	Shaft Size	Stock No.	Compressor	Shaft Size	Stock No.
Brunner ... 1 1/2"		9376	Iceberg ... 1 1/2"		2171
Carrier ... 1"		9178	Kellogg ... 3/4"		2390
Carrier ... 1"		9179	Kelvinator ... 1 1/2"		17123
Coldspot ... 1 1/2"		6400	Mills ... 3/4"		17137
Coldspot ... 1 1/2"		6401	Sanitary ... 3/4"		2381
			Sanitary ... 1"		2582
Cordley & Hayes ... 3/4"		2334	Westinghouse ... 1 1/4"		17366
Curtis ... 1"		9289	Westinghouse ... 1 1/4"		17367
Grunow ... 3/4"		9395			

OTHER USES FOR DRIERITE

IN recent industrial exhibitions held in various parts of the country, W. A. Hammond Drierite Co., have demonstrated the use of Drierite in other fields outside of refrigeration.

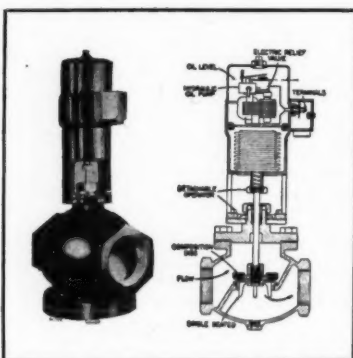
First of these are sample cable spikes dried with Drierite which represents the standard practice throughout the Bell Telephone System and in an ever-increasing number of independent telephone companies throughout the States and Canada, and a few foreign companies. Drierite was adopted for this use after extended research by Bell Telephone Laboratories and is now specified for use throughout the Western Electric Company's operations.

Second, is a unit of the Flosdorf-Mudd Cryochem apparatus for the dehydration of biological serums from the frozen state. This is an important and growing application and involves refrigeration in that the serums are frozen by rapid evaporation under vacuum and the ice completely removed by the low vapor pressure of the Drierite tower. This unit attracted considerable attention.

\$\$\$

NEW GENERAL CONTROLS VALVE

ANNOUNCEMENT is made by General Controls Co., Glendale, Calif., of the General Controls Hydramotor Valve, a new all-purpose hydraulically operated motor



A NEW HYDRAULIC MOTOR VALVE

valve for handling air, gas, water, oil (any gravity, any grade), brine, saturated steam, etc. This newly developed valve is the culmination of four years of intensive research, engineering and testing in both laboratory and field.

A veritable powerhouse in operation, the new valve is of the full-ported single-seated



"With SPORLAN VALVES on the Job You Can Easily Detect Moisture or Foreign Matter which so Frequently Causes Refrigerating System Failures"

All Sporlan Thermostatic Expansion Valves and Sporlan Solenoid Valves can readily be taken apart with an ordinary wrench and without unsoldering any joints for inspection, drying and cleaning.

Think what this means to Service Men, Contractors, Dealers and Manufacturers in eliminating extra service calls due to incorrect diagnosis of system failures. In a few minutes spent right on the job, the true reason for failure can be ascertained and in a majority of cases, the cause of the failure can be eliminated and the system put back in operation almost immediately with positive assurance that no call backs will be necessary.

Accessibility of parts is another important money-saving reason why you should insist on Sporlan Valves. In addition, Sporlan Valves give you peak performance on all installations.

Sporlan Thermostatic Expansion Valves are easily taken apart for inspection, cleaning and drying - no special services needed as joints to be unsoldered.

You can install Sporlan Valves with confidence

Sporlan Solenoid Valves can be taken apart for inspection and cleaning with an ordinary wrench without breaking any soldered joints.

SPOEHRER-LANGE COMPANY

3725 COMMONWEALTH AVENUE . . . SAINT LOUIS, MISSOURI

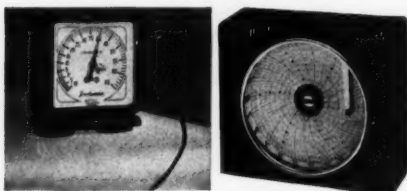
type and affords 100 percent tight shut-off in any position. The electric pilot valve has a simple, two-wire, current failure control, with exceptionally low current consumption—only 60 VA during the opening cycle and 5 VA when open. Absolutely no gears are used and there is only one internal switch. The entire operator is totally enclosed, sealed in oil, and is drip-proof. Long life, unaffected by heat, is assured. There are a minimum number of moving parts, all of which are bathed in oil. The entire operator is detachable from the valve body.

Hydramotor Valves are regularly furnished in IPS valve sizes of $\frac{1}{2}$ inch to $1\frac{1}{2}$ inch with brass body, bronze trim, and 2 inch to 4 inch with iron body, bronze trim; the 4 inch size has flange connections optional.

\$\$\$

MARSH INSTRUMENTS SHOWN

IN addition to a wide variety of pressure gauges, Jas. P. Marsh Corp., Chicago, Ill., displayed at the January convention their complete line of "Serviceman" recorders.



TYPE 65 SERVICE THERMOMETER AND
TYPE 70 RECORDING THERMOMETER

The Marsh "Serviceman" recorders provide accurate, dependable means of recording and studying fluctuating operating conditions. The instruments are small (only 5 inches x 6 inches x $2\frac{1}{4}$ inches) and extremely light in weight.

The type No. 65 service thermometer is a dial thermometer with a generous length of capillary tubing. Its overall dimensions are $8\frac{1}{2}$ inches by 4 inches by $1\frac{1}{2}$ inches—small enough to be carried in the pocket.

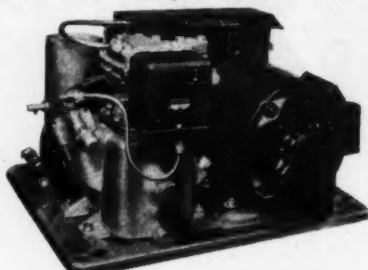
Type No. 70 self-contained recording thermometer accurately records temperature wherever it is placed. A bi-metallic spiral of advanced design sensitively reacts to temperature changes and operates the pen in relation to the rotating chart.

Type No. 72 recording gauge accurately records pressure variations or, in the case of the compound gauges, pressure and vacuum.

Type No. 73 operation recorder clearly records alternate periods or cycles of "on" and "off." Designed for direct connection across the power line.

SERVEL "SILVER FLEET"

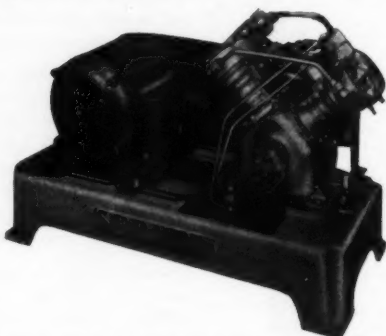
SERVEL'S "Silver Fleet" line of commercial electric refrigeration equipment was featured at the All-Industry Exhibition, with representative models from their 1940 products. More than 50 different machine units are included in this year's line.



MODEL S.U.-25 SERVEL UNIT

Smoothness and quietness of operation were particularly emphasized in the line. All standard "Silver Fleet" units from $\frac{1}{2}$ hp. up have four or eight cylinder compressors.

The parts interchangeability feature of the new Servel line also attracted much interest. It was explained that each compressor and machine has been designed not as an individual but as a member of the "Family." As an example it was pointed out that the standard "J" compressor is exactly like the "U" compressor, except that one has four cylinders and the other has two. This means



Larger meat markets, restaurants, taverns, retail dairies and food processors find this Model WQ-200 Servel 2 HP water-cooled four-cylinder machine unit admirably suited to their needs.

that these two models use the same pistons, cylinder bodies, valve plates, valves, set of gaskets, heads, eccentrics, shafts and seals. Another pair of "twins" designed for similar interchangeability of parts are the "Y" and "Z" compressors. Such an arrangement simplifies the distributor's parts problem.



"FLEXIBLE SERVICE" BEGINS IN VIRGINIA'S ORDER DEPARTMENT



Mr. C. N. Yerby, in charge of the Tabulating Department, says, "Our excellent equipment and modern methods are assisting Virginia Jobbers in passing a rapid and flexible refrigerant service along to their customers."

Here's Virginia's new roomful of clerical machinery—the most advanced available—to help us sort and fill orders *promptly*—and to get your bills out accurately and on time.

EXTRA DRY ESOTOO
V-METH-L
METHYLENE CHLORIDE



VIRGINIA SMELTING COMPANY

Located at tidewater, Hampton Roads
West Norfolk Virginia

ONTARIO MAPLE LEAF CHAPTER TO SPONSOR REFRIGERATION EXHIBIT

THE first general exhibition of refrigeration equipment and supplies ever to be held in Canada will be sponsored by the Ontario Maple Leaf Chapter of Toronto on Monday and Tuesday, April 1st and 2nd, 1940, at the King Edward Hotel.

Every service man in the Canadian provinces is cordially invited to attend this exhibition and to participate in the educational program which will be arranged to include speakers and lecturers on pertinent subjects of interest to all service men. Some thirty exhibits have already been reserved, and concluding the two-day exhibit and educational features will be a banquet, floor show and dance.

The program has been carefully planned by the members of Ontario Maple Leaf Chapter to bring a real exhibition and convention to the Canadian service men and advance reports indicate much interest in this important Canadian event.

Canadian service men from all the provinces are being urged to attend and an intensive mailing campaign during the coming month will bring additional information direct to each service engineer.

The convention is being patterned after the program of the annual conventions of the Refrigeration Service Engineers Society.

Among the interesting educational features will be a tube bending contest with valuable prizes.

Additional information may be secured from the Secretary of Ontario Maple Leaf Chapter, Mr. Frank C. Strong of 238 Arlington Avenue, Toronto, and service men interested in attending this meeting are requested to write to Mr. Strong to be placed on the mailing list to receive the current literature as issued.

MISSOURI VALLEY CHAPTER CONTRIBUTES TO CHARITY

TWENTY-FIVE members of the Missouri Valley Chapter recently gave one dollar each to the Good Fellows Christmas fund for Omaha's underprivileged children.

The drive for funds was called, "The Mile of Dimes," and while depositing their ten dimes each, a local newspaper photographer snapped a picture of the members, which was published the following day.

CHAPTER NOTES CLEVELAND CHAPTER

February 8—This meeting was devoted primarily to the election of new officers, and after following the usual routine of such elections, the results were as follows: *President*, A. M. Fenwick; *1st Vice President*, E. Flanik; *2nd Vice President*, Glen Keller; *Secretary*, Walter E. Wright; *Treasurer*, Karl L. Debes; *Sergeant-at-Arms*, C. Lanese; *Chairman of Educational Board*, James Downs.

February 22—A chicken and steak dinner was served to ninety-six members and friends as the first order of business for the evening. During the dinner, old-fashioned songs were sung, and every one made it his business to become acquainted with his neighbor. Introductions of new officers and visitors were formally made, and it was announced that not only was this night the birthday of George Washington, the Father of our Country, but also was the birthday of George J. Schuld, the Grandfather of the Chapter. George was one of the organizers of the chapter, and has not missed a meeting since it started. A three-layer birthday cake was presented to him by a singing Western Union Messenger; the source of the cake is a mystery.

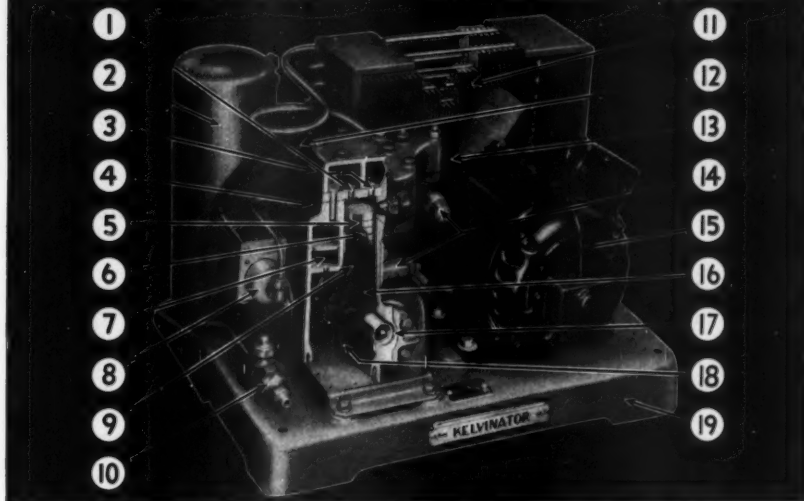
Card playing and a general good time was the order for the balance of the evening, with many prizes being given away for the best card players.

March 1—This was a special meeting to map out educational features for the entire year of 1940. Ways and means of increasing membership were also discussed, and it was decided that a perpetual membership drive should be carried on. An invitation system was introduced, in which guests cards would be printed, containing three stubs attached to each. These stubs would be dated for three consecutive meetings, and the guests will present these cards at the door upon entering, and the stub will be taken by the Sergeant-at-Arms. On the second meeting that the guest attends, he will be approached for membership. It is felt that this system will always bring some guests to each meeting.

CHICAGO CHAPTER

February 13—Past Secretary Weir read the minutes of the previous meeting and gave his report for the past year, including a financial report of the chapter. He then turned his office over to newly elected Secretary H. D. Busby. Introductions of new officers were as follows: Eugene H. White, *President*; Otto Hladilek, *First Vice Presi-*

KELVINATOR GIVES MORE PLUS FEATURES AT REDUCED PRICES



PRICED for you to Buy it . . . and Sell it!

Now, at these new low prices, you can afford to sell Kelvinator . . . to build your reputation with the finest condensing units Kelvinator ever made. Just look at these important basic features. You'll find them in all the 11 air cooled and 8 water cooled models. You'll find outstanding sales features also in all Kelvinator reach-in refrigerators, water coolers, beverage coolers and frosted food cabinets . . . and you'll find equally startling new, low prices. Investigate this fine, modern line, today.

1. Valves in Head, flat reed type.
2. Liquid Receiver, seamless steel shell on all models up to and including ½ H. P.
3. Cylinder Head, easily removed.
4. Cylinder Block contains cylinder and crankcase in one piece.
5. Pistons, selectively fitted.
6. Piston Pins, chrome nickel steel.
7. Suction Chamber, no oil slugging.
8. Pressure Controls.
9. Connecting Rods with extra large bearing surface on crankshaft.
10. Liquid Line Valve, easily reached.
11. Condenser, continuous tube type.
12. Compressor Pulley, well balanced.
13. Drive, V-type moulded belt.
14. Service Valves, two way type, with gauge connections.
15. Motor, heavy duty refrigeration.
16. Crankshaft, extra heavy, heat treated, drop-forged steel with ground finish.
17. Main crankshaft bearings, leaded bronze, with large diameter and surface, diamond bored and grooved for perfect lubrication.
18. Lubrication, crankshaft and connecting rod bearings by oil bath; piston and piston pin by oil splash.
19. Compact, one-piece cast iron base.

26 Years of Success in Refrigeration

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The Complete Line, Completely Built by One Company

Kelvinator Division, Nash - Kelvinator Corp.
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Gentlemen: Please send me your catalog, price and discount sheet.

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FOR DRYING AIR REFRIGERANTS INDUSTRIAL GASES

DRIERITE is an Efficient, Rapid, Economical Dryer for all the Modern Refrigerants. Dries both by Chemical Action and Adsorption.

Used in Dehydrators by leading manufacturers and furnished to the Service Engineer by leading Supply Dealers.

Write for literature.

W. A. HAMMOND DRIERITE COMPANY
 YELLOW SPRINGS, OHIO

No Waiting • No Worrying • No Wishing
 for UEI trained men!

NO WAITING—When opportunity comes UEI trained men are prepared for promotion.

NO WORRYING—About service problems. UEI men know all phases of installation and service work.

NO WISHING—UEI men know you can't become an expert refrigeration serviceman by wishing. It takes training . . . good training . . . the type of training UEI has offered for years.

UEI training combines the finest features of home study with actual shop practice.

WRITE FOR DETAILS NOW

UTILITIES
ENGINEERING INSTITUTE
 404 N. Wells St., Dept. 552, Chicago, Ill.

dent; Peter Bendel, *Second Vice President*; Frank Weir, *Treasurer*; H. D. Busby, *Secretary*; R. L. Hendrickson, *Educational Chairman*; E. H. Szabo, *Sergeant-at-Arms*; Directors, J. Barksdale, J. D. Horan, Steve Archie, F. E. Jernberg, Irving Alter.

The meeting was adjourned at 10:45 p.m., and it was with considerable surprise and enjoyment that the members present received the news that Mr. M. W. Knight, of Peerless of America, Inc., had provided refreshments for the evening.

February 27—The meeting took the form of an open party to which the members, their friends, and ladies were invited.

A Mills Automatic phonograph provided music for the evening, and the party started with about an hour's dancing. After the attendance had been seated, Gene White made a few remarks relative to future plans of the chapter, then introduced Herman Goldberg. With the aid of Mel Knight, Herman immediately started a showing of the movies taken by him at the 6th Annual Convention in Chicago.

The movies required about forty-five minutes to run, which will give an idea of the large amount of film used by Herman in recording this annual event. For those who were not in attendance at the convention, it provided a complete tour of all the exhibits and all the major events of the convention.

TRI-COUNTY CHAPTER

January 5—The annual meeting of the chapter was called to order at Julia King's restaurant in Aurora. A dinner was served the members with dancing and musical numbers as entertainment during the meal, after which the business meeting was called to order, and the minutes of the previous meeting read. Reports of the outgoing officers were made, including the Secretary-Treasurer's financial report. New officers elected for the year were: *President*, Willis Stafford; *Vice-President*, Harold Anderson; *Secretary-Treasurer*, Clarence Stumpf; *Sergeant-at-Arms*, N. H. Rust; *Board of Directors*, Wm. Metcalf, Lawrence Millen, Arthur Wolff.

February 16—Mr. Marc Shantz of Fedders and the Tecumseh Products Company was a guest of the evening, and gave an interesting and informative talk on selling service work.

Mr. John Burge of Chicago was also a visitor for the evening.

COLUMBUS CHAPTER

January 11—In an effort to increase attendance at the meetings, and thus to improve the interest of the members, it was suggested that the membership be divided into teams having approximately four men

on each team and a captain. The captain would be responsible for the attendance of his men, and in the event one of his men could not attend, the captain should try to fill the vacancy with an interested friend. Each meeting, the team would receive an attendance percentage, and visitors, as well as members, would be counted. The plan would be culminated in a banquet, to be held about March 28, and the losing team would be required to treat the winning team. The captains were appointed and five teams selected from the members present.

FOX RIVER VALLEY CHAPTER

January 23—At this meeting nominations were presented for Chairman of the Educational Committee, and after several nominations had been received and duly considered, Mr. Jim Vinje was elected. Other committees to carry out the work of the chapter were appointed by President E. K. Wagner.

Reports of the National Convention were made by delegates, Ray Moss and V. O. Bliss.

PONY EXPRESS CHAPTER

February 20—President Nichols appointed an auditing committee to go over the books of the retiring Secretary-Treasurer. This committee reported that the records, receipts and cash on hand balanced to the satisfaction of all members.

The Entertainment Committee was asked to locate a suitable place for the annual fish fry, held every year during the smelt run, and to report back at the next meeting.

Secretary Storm gave his report on the National Secretaries' Meeting in Chicago during the convention.

LOS ANGELES CHAPTER

February 14—The meeting was held at the Safeway Store at 1925 East Vernon Avenue, and after the reading of the minutes and other routine business, a discussion was held concerning the R.S.E.S. dinner to be held March 30. It was unanimously decided to hold the affair at the Potrero Country Club. A tour of the various departments of the Safeway Store occupied the balance of the evening.

WINNIPEG CHAPTER

January 30—The meeting was called to order by President J. B. Shepherd and the first order of business was the election of the Secretary to serve during the coming year. Mr. Ed Short was elected from the three nominated.

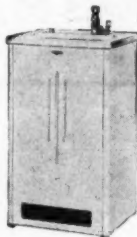
Several applications for membership in the

The Correct unit FOR EVERY NEED!

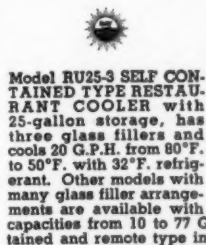
- STORAGE TYPE INSULATED TANK COOLERS
- DRINKING FOUNTAIN CABINET COOLERS
- RESTAURANT CABINET COOLERS
- BEER AND BEVERAGE COOLERS



Model CE-25 INSULATED TANK COOLER with 25-gallon storage, cools 20 G.P.H. from 80°F. to 50°F. with 32°F. refrigerant. Other models for an infinite number of installations are available from 9 to 1008 G.P.H. capacity.



Model DU2-1 SELF CONTAINED TYPE DRINKING FOUNTAIN CABINET COOLER with 1 3/4-gallon storage, cools 9 G.P.H. from 80°F. to 50°F. with 32°F. refrigerant. Other models are available up to 77 G.P.H. capacity with many bubbler arrangements for self-contained and remote type installations.



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● TIP No. 6



ECONOMICAL

$\frac{3}{8}$ ounce of Thawzone, costing only 10c, protects one pound of refrigerant.

Before you put ANY unit into operation --- ADD THAWZONE!

• **Prevents corrosion—protects vital parts**

Whether it's a new, reconditioned or repair job—service men today are adding Thawzone to EVERY job before starting it up. Why? Because Thawzone destroys every trace of moisture in the system, leaving it chemically dry thereafter. This prevents future moisture troubles, freezeups, acid formation and corrosion. Thawzone is liquid, easy to apply. A little goes a long way. Oil and refrigerants remain substantially pure and undiluted.

• See your jobber for Thawzone. Write us for literature.

**HIGHSIDE CHEMICALS CO.,
Newark, N. J.**



chapter were received and accepted. Reports of the Annual Convention, held in Chicago, were given by President Shepherd and Mr. F. Chance, who represented the chapter as its delegates. The members found these reports to be very interesting and congratulated Mr. Shepherd on the honor of having been appointed to the National Board of Directors.

Mr. Chance spoke at length on the duties of the Educational Chairman, and gave an interesting account of the educational papers delivered at the National Convention.

PHILADELPHIA CHAPTER

January 8—The meeting was held at the Jourden School with all members present. President Grant presided, and after the reading of the minutes of the previous meeting, a treasury report was given.

The Question Box was opened, and an interesting discussion took place during the course of answering these questions.

DAYTON CHAPTER

February 2—Plans are being made for a meeting in Piqua on March 29, where it is hoped that Mr. William McCollough, State Representative, will be a guest speaker of the evening.

Mr. T. W. McNerney, Sales Engineer for the Gates Rubber Company, was a visitor of the evening, and spoke on the subject of belts.

FURNITURE CITY CHAPTER

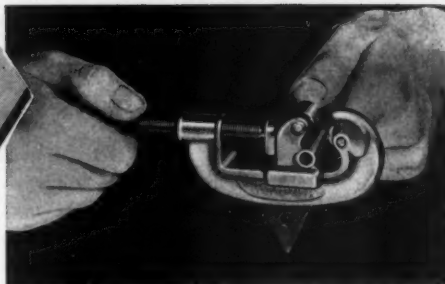
February 8—The meeting was called to order by President Wm. H. Wilbur, and after Mr. McDermott had read the Constitution and By-Laws of the organization, and administered the obligations to the members, he presented the charter, which Mr. Wilbur received on behalf of the chapter.

An election of permanent officers followed with the following results: *President*, Mr. Wm. H. Wilbur; *Vice President*, Mr. Louis Post; *Secretary*, Mr. L. J. Scott; *Treasurer*, Mr. K. Henry; *Educational Chairman*, Mr. T. Cummings; *Board of Directors*, Mr. John Weidenfeller, Mr. Vor Udell, and Mr. C. Simpson.

February 22—After some discussion, it was decided that the chapter would conduct a dance, to be held the first Saturday in April, and a committee was appointed to complete arrangements. The meeting was turned over to the Educational Chairman, who introduced Mr. Green, from Terice Company, Detroit, who spoke on the subject of thermometers and recorders. Harry Scott gave a demonstration of the Temprite system.

SPECIALIZED TOOLS for REFRIGERATION WORK

END *your* TUBE CUTTING TROUBLES...



Make clean, smooth cuts . . . quickly . . . without flattening the tube, with this Snap-on No. 27 Tube Cutter—it's fast, efficient, durable. This serviceable tool will cut any copper, brass, bronze, or similar tubing, and will handle sizes $\frac{1}{8}$ " up to 1". The replaceable cutter wheel has an extremely thin edge that cuts cleanly through the entire thickness of tubing, and the tube rides between rollers that prevent dents and "flattening."

"V" blade under the tool makes a good reamer for removing the burrs off the inside of the tube after the cut has been made. Equip yourself to do a better job—faster . . . on every stop—finish every job in just one stop.



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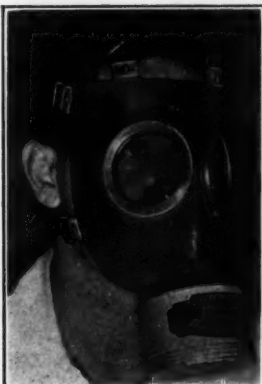
Kenosha, Wisconsin



FURNITURE CITY CHAPTER CHARTER PRESENTATION NIGHT.

Left to right front row are: Kenneth Henry, H. T. McDermott, William F. Wilbur, Lovell Scott, Thomas J. Cummings and Louis Post. Second Row: Harry Scott, Cecil Simpson, Milton Thiebout, Fred Mendricks, Martin Bontekoe, Earl Leitch, Al E. Du Monte, Russell Copp and Adrian Hoek. Third Row: Fred Goodwin, Levi Finch, John Weidenfeller, Clarence J. Maloney, Ray Falicki, Charles Conrad, Don Lamphere, Claude Jackson and Vor Udell.

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Brooklyn, N. Y.

Postage prepaid in U. S.
if payment accompanies
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● **WRITE FOR NEW BOOKLET** showing Masks,
Respirators and other safety data for refrigeration engineers.

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LONG BEACH CHAPTER

February 1—The members gathered at the Los Angeles Department of Water and Power at 7:00 p.m. for a trip through the light plant. Mr. C. A. Hammond was the guide and took the members through the plant, explaining the different operations as they went. Bill Wimmer and Jim James gave an interesting talk in the control room of the plant, and explained the intricate machines used there.

COLONELS CHAPTER

February 1—The meeting was opened by President Tingle, and after the minutes of the previous meeting were read and accepted, Mr. Moore gave a general report of the National Convention in Chicago. A discussion followed on impressions of the convention by those who were in attendance, and a motion was made and accepted that the banquet picture taken at the convention be framed for display in the chapter meeting room.

February 15—After the reading of the minutes, the meeting was turned over to Mr. H. F. Spoehrer, of the Spoehrer-Lange Company, who gave an informative talk on thermostatic expansion valves, illustrated by slides showing the construction and applica-

tion of Sporlan valves. The subject was handled so completely that after the talk was finished, even the chronic question-askers failed to ask any questions.

ATLANTA CHAPTER

January 5—The meeting was held at the Nash-Kelvinator Corporation, with a good attendance present. The Program Committee was appointed, consisting of Thomas L. Carnell, *Chairman*, Charles S. Biggers, and M. G. Ogden, with instructions to complete a definite program for future meetings, and to notify guest speakers, or any other parties concerned, in ample time for the meeting.

CANADIAN CAPITAL CHAPTER

January 8—Mr. Krobie of the Canadian General Electric Company was the guest speaker of the evening, and was introduced by Mr. Milliken, Educational Chairman. Mr. Krobie gave an illustrated lecture on, "How To Determine the Amount of Heat Leakage of a Refrigerator Wall," and answered many questions, brought up by the members present.

The door prize was drawn by Mr. Krobie, and the lucky number was held by Mr. Goodman, who received a large Snap-On Screw



25th
ANNIVERSARY
1915-1940

● A recent Ansul advertisement said, "No order for Ansul refrigerants ever spends the night, unfilled, in an Ansul office basket." One of our foreign agents read it, elected to test our claim. His report: "Thank you very much for your wire . . . apparently your advertising is no idle boast when you say, Today's Ansul Orders Are Being Shipped Today." You can be certain of that when your order specifies Ansul products.

ANSUL CHEMICAL COMPANY, MARINETTE, WIS.

ANSUL SULPHUR DIOXIDE
ICE-X
METHYL CHLORIDE

THERE IS AN ANSUL JOBBER NEAR YOU ANXIOUS TO SERVE YOU BETTER

Driver, donated by the Snap-On Tools Corporation.

January 19—"Information Please" was the educational program for the evening, and the discussion centered around multiplexing cooling units on one condensing unit with various controls. Ace Brownlee won the ratchet wrench donated by Keyes Supply Company as a prize.

February 5—Bill Weaver, Toronto Maple Leaf Chapter, was a guest of the evening, and he outlined methods used by the Toronto Chapter in carrying on meetings.

Mr. Milliken gave a summary of the 6th Annual Convention held in Chicago, and a door prize, consisting of a thermometer, was won by Mr. Herbst.

The educational program consisted of a questionnaire, or debate, in which Mr. Podd competed on one side, and Mr. Lowry on the other. The questions were taken from the Question Book, and most of them were answered correctly.

CENTRAL INDIANA CHAPTER

February 18—After some discussion of the matter, it was decided that the chapter would raise its annual dues from \$5 a year to \$7.50, and the Secretary was instructed to notify all members of the change.

The office of the President was declared vacant, and W. M. Sevy, former Vice President, was moved forward to fill the vacancy.

ST. LOUIS CHAPTER

February 8—Educational Chairman, Gy-gax introduced H. D. Graves, Regional Manager for the Temprite Products Corporation, of Detroit, Michigan, who gave an interesting talk on the many possibilities in the field for his company's Instantaneous Cooler, citing as examples many of the existing installations. After covering the installation and service story, the meeting was open to questions, all of which were satisfactorily answered, and after a brief recess, the meeting was adjourned to partake of the hospitality of the Temprite Company. The refreshments were cooled by one of their own demonstrating machines.

January 11—The greater part of the evening was devoted to the annual election of officers, and after following the usual routine, the results were as follows: *President*, O. E. Petri; *1st Vice President*, L. C. Haney; *2nd Vice President*, E. C. Fix; *Secretary-Treasurer*, E. A. Plesskott; *Sergeant-at-Arms*, L. L. Vollman; *Educational Chairman*, E. Gy-gax; *Board of Directors*, Wm. H. Dieckmann, A. H. Huhn, H. B. Menaugh.

January 25—Mr. B. R. Davidson of the Hussmann-Ligonier Company was introduced by President Petri, and outlined the many necessary qualifications of a success-

DRY

with one of these
IMPERIAL REFILLABLE
DEHYDRATORS



DRIER is contained in refill cartridge which can be readily removed and a new one substituted. Dispersion tube is an integral part of cartridge, increasing drying efficiency and minimizing pressure drop. Refill cartridge is furnished in moisture-proof tin container in different lengths, for dehydrators of various shell lengths. Choice of four driers at same price: Calcium Oxide, Activated Alumina, Calcium Chloride, or Drierite.

Size and Type Connection	No. 510-C Fitted	No. 512-C Fitted	No. 514-C Fitted
1/4" S.A.E. Flare	\$ 8.00	\$11.75	
3/8" S.A.E. Flare	8.35	12.10	\$15.75
1/2" Female I.P.T.	9.25	13.00	16.25
1/2" Flare	9.25		
1/2" S.A.E. Flare		13.00	16.25
1/2" Female I.P.T.			17.25
No. 510-C. 5 1/2" Shell. Overall Length 7 3/4"; Capacity: 11.5 cu. in.			
No. 511-C Refill cartridge filled with drier—\$2.50.			
No. 512-C. 12" Shell. Overall Length: 14 1/2"; Capacity: 27 cu. in.			
No. 513-C. Refill cartridge filled with drier—\$4.75.			
No. 514-C. 18" Shell. Overall Length 20 3/4"; Capacity: 41.5 cu. in.			
No. 515-C Refill cartridge filled with drier—\$6.75.			

THE IMPERIAL BRASS MFG. CO., 1204 W. Harrison St., Chicago, Ill.

IMPERIAL Air Conditioning and Refrigeration Products

ful service engineer, and stressed the need for a proper diagnosis of trouble before any attempt is made to service a piece of equipment. He gave as his opinion that there are times when gadgets may be added to refrigeration equipment to serve a definite purpose; otherwise a properly engineered system correctly installed, should serve efficiently and economically without outside aid.

AKRON CHAPTER

February 1—The meeting was accompanied by a dinner, to which the ladies were invited as guests. The guest of honor for the evening was Attorney R. L. Culbertson, who addressed those present on the subject of legal aspects of refrigeration service work.

MONUMENTAL CHAPTER

January 10—The meeting was devoted to the election of new officers with the following results: *President*, Mr. J. W. Mattheis; *1st Vice President*, Mr. E. E. Starkey; *2nd Vice President*, Mr. H. O. Makoksy; *Secretary*, Mr. H. H. Salley; *Treasurer*, Mr. H. W. Goodhart; *Educational Committee Chair-*

man, Mr. J. B. Ottenheimer; *Board of Directors*, Messrs. C. L. Bassford, H. H. Gibbons, J. F. Gladden, H. S. Eklof, Wm. Zimmerman.

INDIANAPOLIS CHAPTER

February 10—The newly elected officers elected on this date are as follows: *President*, Thomas Driskell; *1st Vice President*, E. W. Wulf; *2nd Vice President*, Ralph Duncan; *Treasurer*, Leon Teters; *Secretary*, John T. Bunton; *Sergeant-at-Arms*, Harry McMinds; *Board of Directors*, J. A. Salter, S. A. Horine, R. K. Duncan, J. A. Cassidy; *Educational Committee*, R. M. Duncan, S. A. Horine, J. A. Cassidy.

WICHITA CHAPTER

January 26—The report of the delegates to the National Convention in Chicago was given by Howard Hasselwood, from which the members received many interesting ideas.

It was suggested that each member be appointed to conduct at least one meeting a year, and to prepare a special program of interest for his meeting. In this way it was hoped that each member would become better

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**MAJESTIC
GRUNOW
COMPRESSORS**

**SERVICE PARTS
COMPANY
Melrose Park, Illinois**

**GENERAL ELECTRIC
FRIGIDAIRE
WESTINGHOUSE**

acquainted with the operation of the chapter, and that his interest in its activities would be increased.

February 2—The meeting was called to order by Vice President Quinn, and an interesting talk was given by Mr. Leeper, of the Federal Reformatory at El Reno, Oklahoma.

The educational program consisted of a tour through the new Ripley Power Plant just north of the city. This is an ultra modern plant, automatically operated, and although it is a large plant, it requires only twenty-eight men to carry on all the operations.

NIAGARA FRONTIER CHAPTER

February 23—A report of the delegates to the National Convention was given by John Bush, and much useful information was derived from the account given of the Secretaries' Luncheon.

The election of officers resulted as follows: *President, John Muller; 1st Vice President,*

John Bush; Secretary and Treasurer, Stanley Szyszkowski; Sergeant-at-Arms, William Goekel; Board of Directors, Messrs. George O'Hara, Chairman, Ralph Davis, and Fred Cameron.

In addition to this election, the following appointments were made: *Chairman of the Educational Committee, John Bush; Entertainment Committee, Fred Cameron.*

PITTSBURGH CHAPTER

February 9—S. C. Perry introduced Ken Davis and Ed Ferrill of the Kerotest Manufacturing Company, and Mr. Ferrill gave an illustrated lecture on the design and use of Kerotest valves. At the conclusion of the lecture, many questions on the application and service of valves and fittings were answered by Mr. Ferrill.

John Barbagallo, delegate to the Chicago Convention, gave a very complete report on the business transacted there, the educational features, and other points of interest he was able to attend.

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Dehydrators
Filters
Neutralizers
Strainers

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thing well*
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LEAK DETECTOR 3 Tools in One



1. LEAK DETECTOR
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3. BLOW TORCH

This Halide Leak Detector accurately detects Freon-12, Carrene and other non-combustible halide refrigerant gases.

BURNS GASOLINE, BENZINE OR NAPHTHA but not alcohol. Flame can be adjusted as desired. No pump—no pressure system. Easily converted from detector to soldering iron or torch.

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10 1/2" Overall
Weights 1 1/2 Lbs.
Burns 30 to 45 Min.

Ask Your Jobber or Write Direct

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2095 Southport Ave.

Chicago, Ill.

TRI-STATE CHAPTER

February 5—The meeting was called to order by President A. W. Gruber. Several applications for membership were received, and the members welcomed to the chapter.

The report of the Auditing Committee was given by Claude Brunton, and duly accepted. An election of officers for the following year resulted in the following: *President*, James A. Cottle; *1st Vice President*, Forrest D. Poole; *2nd Vice President*, John Smoot; *Secretary*, A. W. Albertsen; *Treasurer*, Ben DeRond; *Sergeant-at-Arms*, Donald Young; *Board of Directors*, Carl Ackley, M. E. Harrison, O. M. Rose, Claude Brunton, Albert W. Gruber.

The new officers were immediately installed and took up their work in the chapter. The educational program of the evening consisted of a quiz contest, conducted by Mr. Gruber, and the prize consisted of a binder for the REFRIGERATION SERVICE ENGINEER.

February 19—After the meeting was opened by President Cottle, and the minutes of the previous meeting were read, several committees were appointed to carry on the work of the chapter during the ensuing year. The quiz contest, conducted by Mr. Gruber, which was started at the previous meeting, was completed at this time, and resulted in Forrest Poole winning first place.

KANSAS CITY CHAPTER

February 7—After the usual reports had been received, and the regular business of the chapter conducted, the meeting was turned over to the educational program. Due to the absence of Mr. Thompson, President Andrews called upon members for service hints and kinks. Under this heading, Mr. Anderson gave quite an extensive report on the new Philco, and Mr. DeWilde discussed a soda fountain and its problems, and Mr. Sullivan gave some interesting information on the new Kelvinator. He also discussed the highside float in the 1985 to 1940 units.

A very lengthy discussion was held on the effects the hermetic units may have on servicemen, and it was felt that the introduction of air conditioning units for automobiles, and room coolers, would offset the loss of service caused by hermetically sealed units.

The drawing for the attendance prize was made at this time, with Mr. S. A. Leitner holding the lucky number.

February 13—The meeting was turned over to Educational Chairman, Thompson, who, in turn, presented two talks produced by the General Electric Company. The talks were furnished through the courtesy of Mr. Hodge of the G.E. Supply, and Mr. Floyd Smith of G.E. Supply assisted in the presentation.



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 Complete Rebuilding and Repairs on All
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Specializing on Westinghouse, G. E. Monitor
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Flushing Refrigeration Co.
 E. E. CONDON, MANAGER, Member R.S.E.S.
 HERMETIC REPAIRS
 133-26 41st AVE., FLUSHING, N. Y.

MADISON CHAPTER

January 23—After the minutes of the previous meeting were read, the Treasurer gave a report on the financial status of the chapter as of date. This was followed by a discussion on the advisability of raising the annual dues to \$7.50; however, the matter was tabled until a future meeting.

Mr. Ray Carlson gave an interesting talk on the commercial importance of methods used in manufacturing SOs.

February 13—The meeting was called to order by President Quam, and the Treasurer's and Secretary's reports were read.

On the educational program for the future, Phil Noth volunteered to give a talk on servicing Crosley units, and Knute Spilde volunteered to give a talk on servicing the Norge Rotator Refrigerator.

Mr. R. Liebly was appointed as a committee of one to contact speakers for other future meetings.

February 26—On the educational program, Phil Noth gave a very interesting talk on the subject of servicing Crosley Household Units.

TWIN CITY CHAPTER

February 13—President Warner introduced Mr. Carl Johnson, Peerless of America, Inc., who furnished cigars for the even-

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ing, and who gave a word of greeting to the members.

Mr. C. A. McCafferty, delegate, gave a complete resume of the 6th Annual Convention in Chicago.

Mr. H. L. Hanson of the St. Paul Post Office, accompanied by Mr. Sheldon and Mr. Roberts of the Minneapolis Post Office, presented a forty-five minute film entitled, "The Mail Goes Through," which was very much enjoyed by those present.

ROCKFORD LADIES' AUXILIARY

December 19—The Auxiliary were sponsors at a Christmas Party for the children of members of the R.S.E.S. Santa Claus arrived to distribute the presents to the children, and the grown-ups seemed to enjoy themselves as much as the children. A pot luck supper was served following distribution of the presents.

On Monday, February 15, a business meeting was held, after which the remainder of the evening was spent playing Contact, and the usual lunch was served. Prizes for the games were won by Mrs. Overman and Mrs. Stollers.

KANSAS CITY AUXILIARY

January 9—A novel way of calling the roll was introduced at this meeting. Each

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**Your 1940 AIRO catalog
and Buyers' Guide of**

**REFRIGERATION and
Air Conditioning
PARTS • TOOLS • SUPPLIES**

Will be ready soon. Send for your copy *now*—on your letterhead please—we'll mail it as soon as the ink dries.



member present who answered the roll call, did so with a household hint or recipe.

A report on the family adopted by the Auxillary for Christmas was read by the Secretary, together with a report of the financial status of the Auxillary.

An election of officers was held with these results: *President*, Mrs. A. M. Hoover; *Vice President*, Mrs. F. C. Smith; *Secretary*, Mrs. R. E. Meeker; *Treasurer*, Mrs. H. L. Green; *Sergeant-at-Arms*, Mrs. F. A. Thompson; *Board of Directors*, Mesdames, O. R. Irwin, J. P. DeWilde, J. Allan Brown.

At the meeting of January 23, Mrs. J. P. DeWilde gave an interesting account of the activities of the National Convention, where a very excellent entertainment program was arranged for the visiting ladies.

TRI-STATE LADIES' AUXILIARY

January 8—The meeting was held at Mrs. John Smoot's residence. The evening was spent in chatting, knitting, and the exchange of recipes. Refreshments were served following adjournment.

January 22—The meeting was held in the home of Mrs. Brunton, where the greater part of the evening was taken up with accounts of the activities of the National Convention, by the various members who were in attendance.

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18 months unconditional guarantee on rebuilding

FRIGIDAIRE METER MISERS, GENERAL ELECTRIC, WESTINGHOUSE, MAJESTIC, and all others.

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**COLD CONTROLS &
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at the following prices, F.O.B. Chicago

Automatic Expansion Valves (All Makes).....	\$1.25
Thermostatic Expansion Valves.....	3.00
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Domestic Cold Controls (Modern Type)....	2.00
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Commercial Dual Controls.....	3.00

ALL WORK GUARANTEED FOR 90 DAYS

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February 5—The ladies met in the home of Mrs. Don Young in Ashland, Kentucky, and here, after some discussion, it was decided that the first meeting of each month would be a business meeting, and that the second meeting would be devoted to entertainment.

The game, "True and False," occupied the remainder of the evening, after which a buffet luncheon was served.

February 19—The meeting was held at Portsmouth, Ohio, in the home of Mrs. Carl Ackley. During the evening, the members were entertained with sketches of the lives of Lincoln and Washington, given by Mrs. Forrest Poole. Refreshments were served later, and the meeting adjourned.

**MISSOURI VALLEY
LADIES' AUXILIARY**

January 25—Meeting was held in the home of Mrs. D. W. Schuneman, and the first order of business was the appointment of officers to fill the existing vacancies. A general get-together and the serving of refreshments occupied the remainder of the evening.

February 1—It was agreed by the members present that Cherry's Refrigerator Service, at 416 South 17th Street, should be made the regular meeting place of the Auxillary in the future.

SPECIAL OFFER

for Inspection and Trial—
You Don't Risk One Cent
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★ Every refrigerator service man in America should respond to Cesco's generous offer. Gives you an opportunity to obtain delivery of this Cesco Healthguard Fume Kit without risking one cent of investment.

Protects Your Eyes—Throat and Lungs On Hurry-Up Emergency Calls!

Be ready for those hurry-up emergency calls—for this newly designed fume kit will keep dangerous and irritating fumes out of your eyes, face and lungs. Kit includes mask and interchangeable cartridges in convenient carrying case. Get details of 7-day Trial Offer. Write



CHICAGO EYE SHIELD CO.
2341 WARREN BLVD., CHICAGO, ILL.

MAGNETIC GAS VALVE

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GREATEST RANGE OF SIZES

From $\frac{3}{8}$ " to 6" inclusive, fulfill requirements of most gas applications.

This quiet, current-failure, two-wire valve opens and closes fuel supply line at demand of thermostat or similar device. Its simplicity, reliability, and low cost of operation has won universal acceptance for positive control of almost all gas-fired applications.

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267 5th Ave., New York City



450 E. Ohio St., Chicago, Illinois

REFRIGERATIVE SUPPLY, INC. OPENS NEW BRANCH

REFRIGERATIVE SUPPLY, INC., announces the opening of a new branch store at South 170 Madison Street, Spokane, Wash.

"This new branch," said Mr. Harold B. Stern, President of the company, "in addition to our main office at 6th, North and Harrison, Seattle, and 619 S. E. 6th, Portland, Oregon, will give us complete coverage of the Pacific Northwest States and Alaska."

"Chuck" O. C. Yates, the very popular and dynamic associate of Harold Stern, in the "Refrigerative Supply, Inc." of Seattle, Wash., was married January 20 to Norma M. Hood, Mr. Stern's secretary.

CO. "BUD" BLAINE, formerly the northwest service manager of the Mills Novelty Co., has established the Master Refrigeration Service & Sales Co., 1815 South 1st St., Yakima, Wash.

He will have factory authorized service on a number of national accounts and has adopted the slogan "where the promise is fulfilled."

NEW CATALOGS AND BULLETINS

REMPE COMPANY, 840 N. Sacramento Blvd., Chicago, have just issued an 8-page bulletin, No. A120, entitled, "Analysis of the Rating and Performance of Fin Coils," by J. O. Schultz.

The Bulletin contains some very interesting information relating to the method of calculating the total effective surface contained in fin coils and the theoretical B.t.u. rating of the coil. The subject of humidity, air movement, pressure settings, and installation arrangements are also discussed.

The Bulletin may be obtained from Rempe Company by request on your letter head.

SERVICE PARTS COMPANY, Melrose Park, Illinois, has just issued a 16-page catalog listing a complete stock of hermetic units for immediate shipment, consisting of General Electrics, Majestics, Grunows, and Westinghouse, also complete parts for these and many other refrigerators.

This firm is in a position to rebuild any make of hermetic units, and will be glad to quote prices on this work.

BE SURE with Genuine **COPELAND PARTS** when servicing Copeland

• Why take chances on losing out by using questionable parts? Use genuine Copeland parts on Copeland Units and be sure of satisfied customers. Restore the original smooth running qualities with precision-machined Copeland parts. Then, too, you save time, and make more money by using Copeland's parts service.

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SIDNEY, OHIO.

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You'll appreciate
COPELAND'S
Complete and
prompt parts
service



ATTENTION JOBBERS

We have completed additional sheets for our loose-leaf jobbers catalog, showing additions to our line of replacement gaskets. If you have not received these new sheets write us today.



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GREASE RESISTANT
AND ODORLESS

JARROW
REPLACEMENT
DOOR GASKETS

• Long life, resilient
and conform to original specifications.

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JOBBERS

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Chicago, Ill.

O. D. GREENLEE JOINS PEERLESS ORGANIZATION

PEEPLESS of America, Inc. at Chicago, Ill., has secured the services of Dan Greenlee to direct the sales program of the Cold Plate (Zero Pad) Division.

Dan Greenlee has been associated with various phases of the refrigeration business for a number of years. Not long after leaving Stanford University in California, he became a member of the test engineering division at Frigidaire, in Dayton. From there he went to Crosley Radio, in Cincinnati to do more test and production engineering work.

In 1933, he joined the newly formed Kold-Hold organization at Lansing, Michigan, where he remained for a period of seven years. While with that concern, his work became more and more involved in selling; subsequently being Sales Manager, later Vice President in Charge of Sales. Thus he brings to Peerless of America, a wide acquaintanceship in the fields of refrigeration, ice cream manufacturing, truck body building and others.

New Addition to Chicago Factory
Peerless has just completed the building

of an addition to the Chicago factory which has increased both its manufacturing space and facilities. This new addition is to house the Zero Pad (Cold Plate) department.

Zero Pads are a new type of plate for ice cream cabinets, trucks, locker storage, etc. These plates are available, both with and without hold-over solution.

In this new Zero Pad department, thousands of dollars have been spent on equipment to manufacture these plates, such as seam welders, sand blasters, metallizing equipment, sheet metal shearing and levelling machinery.

Joseph Balistreri
New York

I wish to renew my subscription for THE REFRIGERATION SERVICE ENGINEER. It certainly lives up to its name, and I've found I can't do without it.

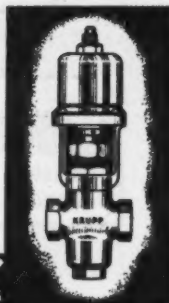
A. P. HELPS SERVICE ENGINEER GET NEW BUSINESS

FOR the past several months, Automatic Products Company, Milwaukee, Wisconsin, has been sending out promotional letters

DEHYDRATORS and STRAINERS

• The new forged end dehydrator is made light in weight and neat in appearance. All unnecessary frills have been eliminated so as to make an inexpensive but entirely satisfactory dehydrator. Write for our new catalog and price list.

We also manufacture Water Regulators.
• Ammonia Valves • Gauge Sets • Strainers



CYRUS SHANK COMPANY
625 W. JACKSON BLVD CHICAGO, ILLINOIS

NEW CATALOG READY MARCH 25

Parts, Tools, and Supplies for Refrigeration and Air Conditioning. Send for your advance copy now, on your letterhead.

H. W. BLYTHE CO.
2234 So. Michigan Ave., Chicago

HERMETIC REBUILDING SERVICE

G.E.—Westinghouse and Majestic

Customers in 37 states had hermetically sealed units rebuilt or exchanged by us in the past year. Complete factory equipment for precision rebuilding. One year guarantee on all rebuilt units. Exchange service available on most makes and models. Write for prices and descriptive literature.

REX REFRIGERATION SERVICE, INC.
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to all the retail markets in metropolitan areas, designed to help the Service Engineer obtain replacement service on A. P. thermostatic expansion valves.

The letters, mailed to all florists, taverns, and meat markets, outline to the owner, troubles he may be experiencing which may be caused by faulty expansion valves. After explaining that a valve replaced now will avoid trouble and expense in the future, the last paragraph of the letter makes a reference such as the following:

"Ask your Refrigeration Serviceman about this. He is interested primarily in keeping your refrigeration system up to peak efficiency, at the least expense to you. He'll be glad to tell you frankly just what the expansion valve means to your system—the protection of your food products and your profits."

A folder describing the product is enclosed with the letter, and copies of both are mailed to each Service Company in the area. Any business derived from this promotional mailing benefits the Service Engineer, the jobber, and the manufacturer alike, and according to reports, good results are being obtained from the plan.

R. M. C. TAKES OVER UNIVERSAL COOLER SERVICE IN DETROIT

MR. H. L. MORRISON, National Service Manager of Universal Cooler Corporation, announces that his Company has turned over to Refrigeration Maintenance Corporation of Michigan, located at 4478 Cass Avenue, Detroit, Michigan, all of its retail service in Detroit and environs.

The new corporation which has been formed will handle, in addition to the local retail service of Universal Cooler Corporation, installation and service on all makes of refrigeration and air conditioning equipment.

Third Unit

Refrigeration Maintenance Corporation of Michigan is the third unit under the ownership and management of T. J. Reedy and A. G. Well, who operate Refrigeration Maintenance Corporation and North Town Refrigeration Corporation in Chicago.

Their policy of cooperation with the concerns for whom they have done work has steadily increased their business from its

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Rate: Two Dollars for fifty words or less.
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FOR SALE—Tag Dual Pen Pressure Recorders—head pressure zero to 150 pounds—suction pressure 30 inches to 30 pounds—Telechron self-starting clock—110 volts, 60 cycles. Original selling price \$77.00, used by prominent refrigerator manufacturer, have been thoroughly reconditioned. A bargain at \$20.00 each. Warren W. Farr, 1412 Marlowe Ave., Lakewood, Ohio.

FOR SALE

500 FRIGIDAIRE COMPRESSOR UNITS

Complete with frame, Model K, 1/2-h.p., less motor. \$10.00 each. Flare-nut fittings of all kinds, 25c lb. Lang and Epstein, 1140 W. Lake St., Chicago, Ill. Phone Haymarket 5484.

DIRECT FACTORY CONNECTION—Commercial line refrigerator display cases, walk-in coolers, refrigerators, direct-draw mechanically cooled beer coolers, full line of compressors. Attractive proposition. Financing arrangements to help sell. 70 years in business. Write for full information or see Ehrlich Refrigerator Mfg. Co., St. Joseph, Mo.

Wanted Sales Representative

An experienced Refrigeration Service Engineer with sales ability to travel and represent well known parts manufacturer exclusively. Company is leader in their field. Single man preferred. Give full particulars. Address Box 105, THE REFRIGERATION SERVICE ENGINEER, 435 N. Waller Ave., Chicago, Ill.

Big bargain on 60 used refrigerators, all makes. Must be sold in one lot. 90% are completely overhauled. Discontinuing sale of used boxes reason for selling. Will dispose of lot at \$25.00 each. All nationally advertised makes. Address Box 106, THE REFRIGERATION SERVICE ENGINEER, 435 N. Waller Ave., Chicago, Ill.

Hermetic Rebuilding

One year's guarantee on rebuilding these refrigerator units

FRIGIDAIRE • MAJESTIC • SERVEL • WEST-
INGHOUSE • CROSLEY • GIBSON • COLD
SPOT • U. S. RADIO • GENERAL ELECTRIC

Our prices are the lowest, send for price list.

CHICAGO HERMETIC REBUILDERS

4379 ELSTON AVE.

PALIsade 0881

CHICAGO

PALIsade 6118

small beginning to its present organization of three units. Their engineering department and analysis of service difficulties encountered in the field has been of incalculable value to the many manufacturers of equipment whom they represent.

The new organization has taken over service personnel of Universal Cooler Corporation. With its location near the geographical center of Detroit it will be in a position to render prompt and efficient service throughout the entire Detroit area.

A complete installation and service organization will be maintained as well as a large stock of parts. Installation and service will be rendered for local manufacturers, distributors, and users, as well as for manufacturers who sell in the Detroit area.

\$\$\$

CENTRAL SERVICE SUPPLY TO HOLD SPRING SHOW

CENTRAL Service Supply Company of Syracuse, N. Y. and Scranton, Pa. announces that they will hold a spring showing of everything new in refrigeration parts, air conditioning supplies, heating controls, and specialties on March 21 and 22.

**PIPE COILS
FIN COILS
UNIT COOLERS
by REMPE**

BEFORE you invest—investigate.
That's a good practice for the
buyer of coils or coolers. REMPE
quality helps make sure your in-
stallation makes good.

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PARTS

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DAY SERVICE

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MONTREAL

The showing will be held in the East Ball-
room of the Hotel Syracuse, Syracuse, N. Y.,
during the afternoons and evenings of each
day. According to Mr. Ted Glou, President
of the company, there will be fun, door
prizes, education and refreshments, and ev-
ery one interested in refrigeration is invited
to attend.

\$\$\$

**MODERN EQUIPMENT REPORTS
EARNINGS FOR 1939**

MODERN Equipment Corp., Defiance,
Ohio, and its parent company, Lynch
Corporation, Anderson, Indiana, prior to
audit show an indicated profit, after provi-
sion for taxes, of \$854,685 as compared with
\$829,419 for the year 1938.

Business booked by Modern Equipment
Corp. in January, 1940, is 80% ahead of
January, 1939. A new high in the interest
of Par equipment was registered at the an-
nual Automotive Aftermarket Show at the
Navy Pier, Chicago, in December; and at
the annual All-Industry Refrigeration Ex-
hibition at the Stevens Hotel, Chicago, in
January.

SERVICE ENGINEER

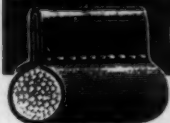
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Hermetic Rebuilders**

MAJESTIC, GRUNOW, GENERAL ELECTRIC,
COLD SPOT, SERVEL, GISSON, AND WEST-
INGHOUSE rebuilding. World's largest re-
builders. Prices \$50.00 with 18 months war-
ranty. Parts for Majestics and Grunows. GE
floats \$3.45. GE Streamliners \$1.50. GE Dis-
charge valves 40c. Westinghouse Rapper valves
65c. 1/4 H.P. Majestic compressor motor \$3.75.
Write for catalog. 1/4 to 3 H.P. new motors—
40% off.

**G & G GENUINE MAJESTIC REFRIGERATOR
AND RADIO PARTS SERVICE**

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**DENNIS GASKETS
FOR ALL MAKES
REFRIGERATOR
DOORS**



A complete line of
rubber-coated, packed
Gaskets and extrud-
ed rubber Gaskets that last longer—retain
higher efficiency—because made of finest
materials and workmanship. Write for
free samples, giving your jobber's name
and address.

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**DOMESTIC TYPE
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